

APRIL 1915 No. 115

Issued Every Month

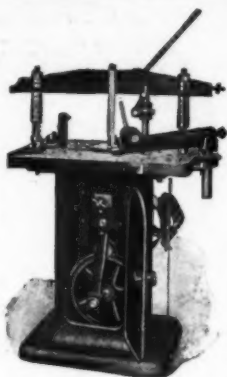
For Free Distribution to Users
of Machine Tools

HITCHCOCK'S MACHINE TOOL LIST

A Reference Book for Buyers
of Iron Working Machinery

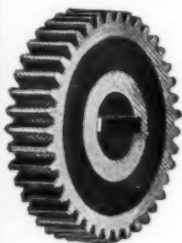
Published by
A. H. HITCHCOCK
1220-1235 Caxton Building
Chicago

The Davis Keyseater



Built in two sizes
Nos. 1 and 2

And
The
Job



The Cutter

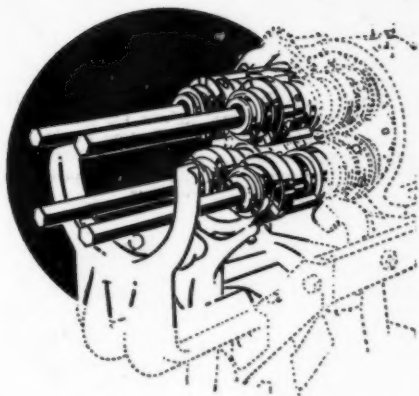


In sizes from
 $\frac{1}{8}$ to 1 inch

The best
argument for
the buyer is in
the tool itself, and
the work it can do.

Write for circulars now.

The W. P. Davis Machine Co.
311 St. Paul St. Rochester, N. Y., U.S.A.



THE GAIN ON ACME MULTIPLE SPINDLE AUTOMATICS

First—An adaptability to screw machine work for any number of operations up to eight. All the tools work in standard tool positions.

Second—A greater output, the time for each piece being measured by the longest operation on it. All the tools work on the four bars *at once*.

Finally—The lowest cost per piece based on the wider range and increased productiveness of Acme Multiple Spindle Automatics.

Capacities up to $2\frac{1}{4}$ " diameter by $10\frac{1}{2}$ " feed.

Send your samples and get the new "Acme Method" catalog—it's free.

THE NATIONAL-ACME MANUFACTURING CO.
CLEVELAND, OHIO

New York

Boston

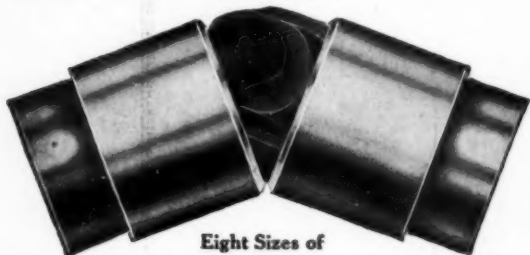
Chicago

Detroit

Atlanta

G. & P. Universal Joints

For use on adjustable Gang Drills and Wood Boring Machines; on the moving feed shafts of Milling, Grinding, Boring, and various Special Machines; for driving self-aligning Boring Bars; for operating mechanisms for Revolving Ventilating Funnels on Steamships; for adjusting mechanisms for Gun Carriages; on Printing Presses and other Paper Handling Machinery; for connecting engine shaft to propeller shaft on Motor Boats, and for all similar purposes.



Eight Sizes of

Strong, Positive Angular Drives

From $\frac{1}{2}$ inch to $2\frac{1}{2}$ inches, varying in size by quarters of an inch, with solid blank ends

They transmit a thrust or tension without play or looseness in any direction. All wearing parts are thoroughly case-hardened. They have no sharp edges to wear other parts. They have no screws or small parts to get loose. They have given many years of satisfactory service in this country and abroad, under all conditions.

Tell us size of shafts to be connected, r. p. m. of joint, the angle, the h. p. to be transmitted, and tool or machine you wish to drive, and let us recommend a Universal Joint for your purpose.

Let US worry over your requirements

GRAY & PRIOR MACHINE CO., Hartford, Conn.



Reliance Bolt Cutters

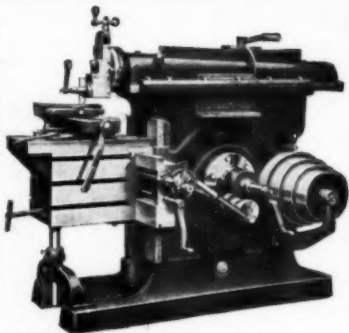
Built in sizes $\frac{3}{4}$ inch to 6 inches, Single, Double and Triple, of the most up-to-date design. There is, also, a good reason why the "Reliance" is such a satisfactory machine for accuracy of threads cut, large production and low cost of maintenance, even in the hands of inexperienced labor. A lot of this reason is in the Opening Die Head, and we would like to tell you all about it. Interesting information for the asking.

The Foote-Burt Co., Makers
Cleveland, Ohio

SHAPERS

12", 14", 16"
Plain Crank,
16", 20", 25"
B. G. Crank,
either Cone
Driven or
through
Speed Box.

24", 28", 32"
Geared
Shapers of
the Belt Shift
type.



The Smith & Mills Co. Station B.,
Cincinnati, O., U.S.A.

Small Manufacturing Lathes



WHY TIE UP your larger lathes with work that can be done to much better advantage on smaller machines?

Dalton 6-Inch Lathes

are designed for handling small work with the greatest possible economy, and are built with the extra strength that adapts them to operations usually taken care of on lathes three or four times their size. And their exceptional accuracy makes them available for tool room and other work where great precision is required.

Write for Bulletin B-600

Dalton Machine Company, Inc.
1901-1915 Park Ave., New York, N. Y.

**The "Rhodes" Improved
Combined Shaper and Slotter
A Vertical and Horizontal Machine**

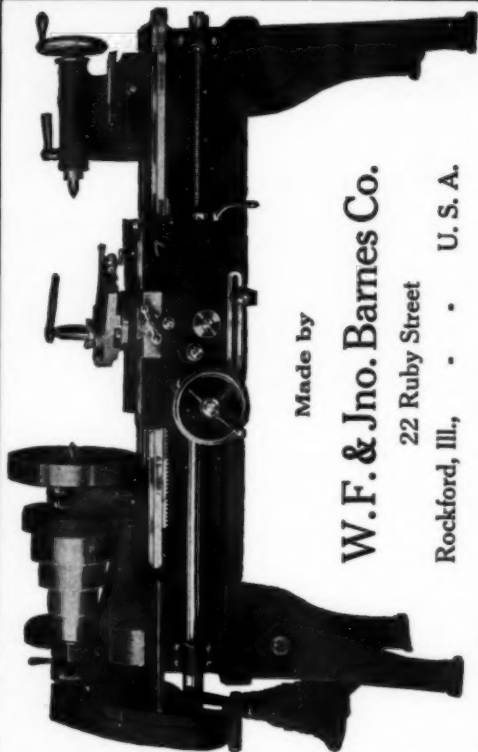
For making tools, dies, models and other small work, and for shaping and slotting all classes of light work, it is exceptionally handy, economical and profitable.

With Vertical Attachment as shown, it is a two-in-one vertical and horizontal machine, with all the essential features of larger machine tools for work within its capacity. It is thoroughly well made, low in price and high in production.

*Write for complete
description and
close price*



THE RHODES MFG. CO., Hartford, Conn.



Made by

W.F. & Jno. Barnes Co.

22 Ruby Street

Rockford, Ill., . . U. S. A.

Barnes 18-Inch Lathe

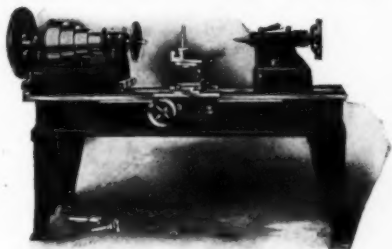
Moderate Price

1 $\frac{1}{2}$ -inch Hole in Spindle

4 instant changes feed in carriage. Made in 6, 8 & 10 ft. beds

Send for Circular

Fay & Scott Improved
Patternmakers' Lathes
In Eight Sizes—With Iron Beds



THE GROWTH of our line of Patternmakers' Lathes has been such a record of improvements, and refinements of design, that they are everywhere accepted as the standard by which others are measured. Expert workmanship goes into every one of them, and they are built substantially throughout.

Among the special features we want to mention are the self-oiling bronze boxes of the Head Stock. Our construction makes them practically dust proof. Carriage has hand screw cross feed, and lateral feed the entire length of bed, by means of rack and pinion. Any of our Lathes can be fitted with power feed. The eight sizes are 10, 16, 18, 20, 24, 30, 36 and 42-inch, belt or motor drive.

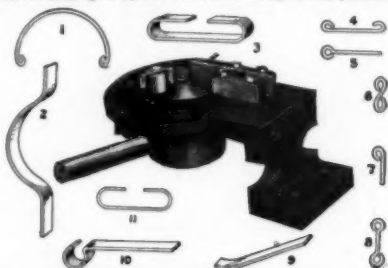
A postal from you will bring an interesting catalog with full details from the pioneer makers of these lathes. Write us today.

Fay & Scott, - Dexter, Maine

Nearly Every Factory

is, at some time or another, confronted with the problem of bending braces, forming of wires, rods or bars, making of rings, "U" shapes, hooks, pipe hangers or bending of pipe.

*Write for Catalogue. Specify **10015** Button for Special Requirements.*



Wallace Supplies Mfg. Co.

353 W. Austin Ave., Chicago; Woolworth Bldg., Park Place, New York



Enlist

Enlist in the army of happy shop owners who have found by installing **Grant Noiseless Riveting Machines** that their output is increased—that their product has a higher quality finish.

An army of **Grant Noiseless Riveters** may be operating at the same time without noise or vibration.

All rivets are highly polished and perfect. Machines will rivet both tight and loose.

*Send samples and let us show you what a **GRANT Riveter** can do for you.*

Grant Mfg. & Machine Company

C. E. Station, Bridgeport, Conn.



You Will Eventually Put A Geometric Die Head On Your Screw Machine

That is what we are aiming at.

The big manufacturers are using them. The smaller manufacturers can't afford to do their thread cutting without them.

Take all the time you want to think it over, for when you have given proper thought to the subject you will put your specifications into our hands.

When you are ready, send them along, and we will quote you on a Die Head.

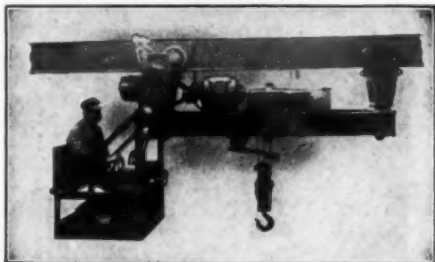
Geometric Self-Opening Die Heads, that release the work when the required length is reached, are furnished for cutting from 1-16-inch diameter up to the largest requirement, of any pitch and form.

Let us know the line of thread cutting you have to do, and we will send you full particulars of the Die Head.

The Geometric Tool Co.
New Haven, Conn.

Chicago Office, 545 W. Washington Blvd.

Mono Rail Hoists and Over Head Track Systems

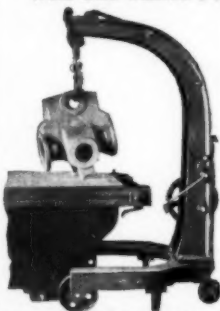


A 5-ton hoist operated from cab or floor for transferring material from one building to another, unloading cars, general yard work, etc. Mono Rail Hoists and trolleys of all types.

Nothing too large or too small for our careful, prompt attention.

The Euclid Crane & Hoist Company
Euclid, Ohio

Replace Six to Ten Men With One Canton Portable Crane and Hoist



It's a big extravagance to have from 6 to 10 men lifting and struggling with awkward castings or heavy pieces of machinery, when one man with one

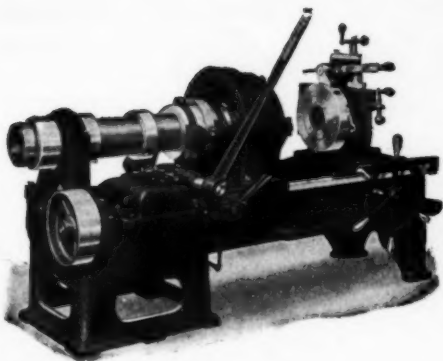
**"Handiest Tool
In the Shop"**

can do it easier and with much greater safety.

We will gladly send you one on 30 days' *free trial* so you can judge. We furnish them with double gears, when so desired, at small extra cost.

Send in your trial request—now

CANTON FOUNDRY & MCHE. CO., Canton, O.



Why Not Secure

The Greatest Economy in Pipe Cutting?

YOU NEED the utmost of convenience and speed in your machines to obtain this result, and that's why B. & K.'s are easily the best for this purpose. Every one of our 17 styles and sizes is fitted with the famous Peerless Adjusting Mechanism. It is simple, and quick of adjustment to the 1,000th of an inch without the use of tools.

We have been perfecting these machines for 30 years. They are reliable for all kinds of pipe, from $\frac{1}{4}$ to 18-in. diameter. They stand up perfectly in making up fittings, which is harder on machines than thread cutting. Nipple holders do not injure threads; chuck jaws are readily sharpened without drawing temper. Every detail has had careful attention.

*Let us supply the exact machine for your needs.
Asking questions incurs no obligation.*

Bignall & Keeler Machine Works
Edwardsville, Ill.

Hydraulic Presses

All Sizes
for
All Purposes

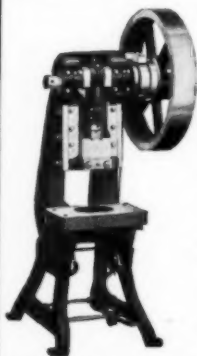


This Press is
for baling Paper
Napkins.

Cars can be
loaded or un-
loaded from
either side.

LOURIE MFG. CO., Springfield, Ill.

Make Your Business



EARN more. Cash in
waste power and time.

HIGH DUTY
ROCKFORD
PUNCH PRESSES

show you the way. Friction is cut $\frac{1}{2}$ and speed is increased. You get more work at less cost and make more money.

Write today for construction details.

The Rockford Iron Works
Rockford, Ill.

Follow These Men

Among real mechanics there is—in every line of tools—one make that stands forth. These men buy Simplex Jacks. This is not an accident. It is due to years of effort and care in manufacture that rises almost to an art. Among railroad men—old mechanics—those in the *know*—there is just one make of jacks—

SIMPLEX JACKS

What is your shop problem? Have you loads to lift that you thought no jack could handle? Do you have heavy machines to move?

Get in touch with us. Tell us your problem and we will show you a jack for the job. Address

Templeton, Kenly & Co., Ltd.

ESTABLISHED 1899

*Manufacturers of Simplex Jacks for industries,
automobiles, railroads and agriculture*

1012 South Central Ave., Chicago, Ill.



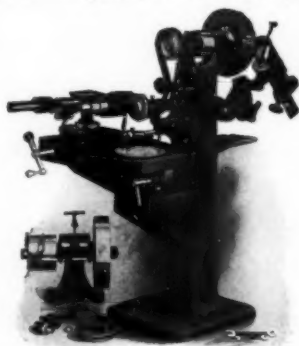
One of the many types of Simplex Jacks that buys
itself many times in a year

**This is An Inexpensive
Cutter, Reamer and Drill Grinder**

**It has Generous Range and Capacity
The Price is Within Your Reach**

Don't delay—look it up now!

Particulars, prices, etc., sent on request.



Style BX

We also make

**Drill Grinders—Surface Grinders—
Lathe Center Grinders—Universal
Grinders—Tool Grinders—etc.**

Wilmarth & Morman Co.

1185 Monroe Ave., Grand Rapids, Mich.

Partridge No. 22

Grinding and Polishing Machines

Furnished as a Double-End Emery Grinder, as a Double-End Polishing Lathe with detachable taper end, or as an Emery Grinder and Polishing Lathe, also with detachable taper end.



These are good tools at a moderate price.

They are safe, efficient and durable—the product of properly selected material and careful workmanship.

The spindle is of special steel, lathe turned, threaded and ground to size; the shafts are of larger diameter and the bearings are longer than are usually found in this class of machinery; the pulleys are shrunk to the shaft and turned with an oval crown; the washers are faced parallel and true, the inside ones being shrunk on and faced true for grinders and left loose for polishers; the bearings are ring oiling, with a large reservoir filled from the side, the inlet being a spring top oil cup which cannot be left open.

The emery wheels can be protected with Partridge Patented Steel Guards, which are adjustable to follow wear of wheel at both top and bottom. They are real guards—not make-shifts.

For particulars and prices of these "Good Tools at a Moderate Price," write to—

E. O. PARTRIDGE, Manufacturer
2039-49 W. Lake St., CHICAGO, ILL.

Combination Disc Grinder & Roll Sander

"Best machine ever built for pattern shop use"

Patented



The No. 29 Gardner combines both the disc wheel and the sanding roll into a compact, sturdy and accurate machine. The disc wheel is used for producing flat surfaces and external curves; the sanding roll perfects internal curves which have been roughed out on a band saw.

Both this disc wheel and the roll remove stock with extreme rapidity and accuracy. With this machine at hand your apprentice boy can do, with greater speed and quality, much of the work formerly done by your best man. A Gardner No. 29 soon pays for itself in any modern pattern shop working four or more men.

Get the details today

Gardner Machine Co.

The Disc Grinding Authorities

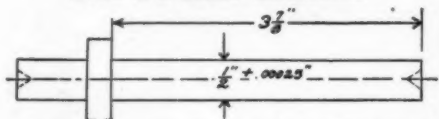
Beloit, Wisconsin

Largest Disc Grinder Builders in the World

44 Tool Steel Shafts per hour on a

Greenfield

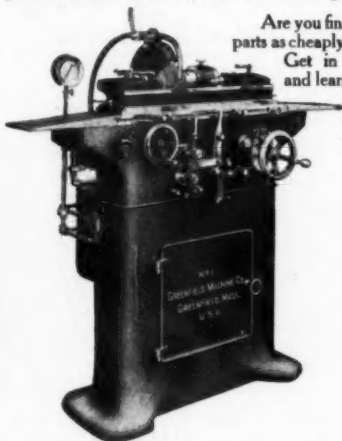
No. 1 Plain Grinder



These shafts are roughed out on a lathe and then finished on the grinder as stated. The finishing cut on the lathe is done away with, and parts come accurate to size and with a polished finish. About .008" is left for the grinder to remove.

Are you finishing your small parts as cheaply and accurately?

Get in touch with us and learn about this low priced grinder and what it can do for you.



**It's a
little
grinder
but
gives
big
results**

Greenfield Machine Company
Greenfield, Mass., U. S. A.

A Lot of Drilling Capacity For \$70.

This 16-inch, No. 7 Barr is a sturdy, reliable, highly efficient sensitive that will give you more service and satisfaction than you have ever bought for so small a sum. Takes drills up to $\frac{3}{4}$ -inch, and handles them effectively. It gets results.

Let us have your address for complete description.

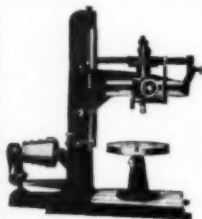
Reed Drill Co., 43 Hammond St., Worcester, Mass.



The Gang Radial

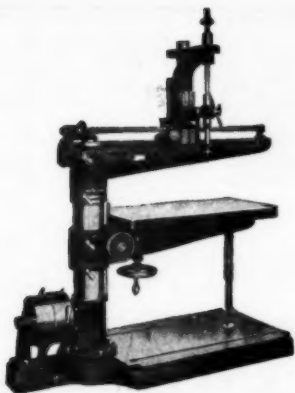
Is Sensitive In The Truest Sense

It responds instantly and perfectly to the will of the operator, giving him the precise result desired with least effort. It has power, capacity, effectiveness; it increases production while reducing costs.



Write for Our Radial Book.
It Tells How and Why.

THE WM. E. GANG CO.
Cincinnati, O.



Drilling Big, Heavy Pieces?

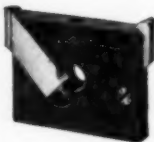
Then this T. & F. can save you money

COMBINING the flexibility of the radial with the speed of the sensitive, this improved standard machine enables users to double and even treble their capacities. For drilling holes ($\frac{3}{4}$ -in. and under) in big, hard-to-handle pieces, it is an economizer of unusual merit.

The drilling head is similar in construction to our other standard types, and is mounted on an arm along which it is moved by rack and pinion. Automatic power feed, lever feed, high speed sensitive or tapping heads may be used, either singly or in combination.

*Acquaint yourself with the various conveniences
They put time- and money-saving within your reach*

The Taylor & Fenn Company
Hartford, Conn.



The Production Boss

"Don't Care A Cuss"

What make or kind of tool he uses—he wants **SERVICE**; he must have **continuous PRODUCTION**.

SHRAPNEL Tools

The Kelly Adjustable Kind

THE KELLY REAMER CO.
CLEVELAND, OHIO, U. S. A.

C. W. Burton Griffiths & Co., London, English Agts. 40 Domestic Agencies

"M. E. C." Collapsible Taps

Are Time and Money Savers

HUNDREDS of users state they have increased their output from 30 to 50 per cent since they employed "M. E. C.'s." They succeed with work where others fail. Glad to have you try one out for 30 days in your own shop.

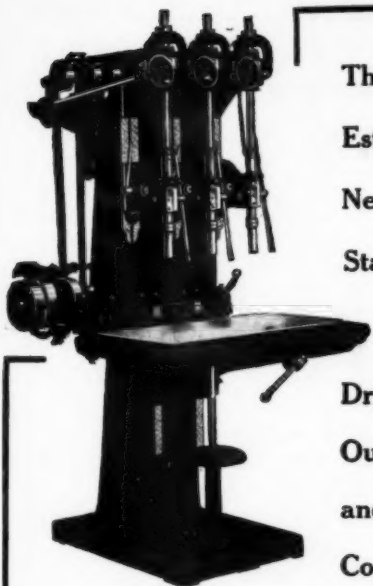
Made in 11 sizes from 15-32 in. to 3 in. straight threads, including $\frac{1}{4}$ in. to 2 $\frac{1}{2}$ in. iron pipe sizes.

**Manufacturers
Equipment Co.**

Lake & Jefferson Sts.
Chicago, Ill.

We also manufacture various styles and sizes of "M. E. C." Air Chucks & furnish complete equipments of tools for brass & iron manufacture.





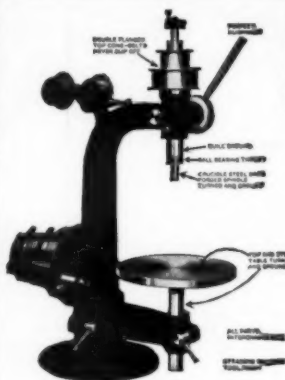
**They've
Established
New
Standards
of
Drilling
Output
and
Costs**

Henry & Wright Improved Machines

have been displacing practically new equipment in some of the best plants in the country, because the difference in output, and in the cost per hole drilled, is so great, that once a manager realizes how much the machines will save, the expense of making the change ceases to be a consideration. We expect to have to prove these things to you, with the "how" and the "why" of it. Will you let us?

*Full Information and a Valuable Drilling
Chart Free. No obligation. Write us.*

The Henry & Wright Mfg. Co.
760 Windsor St., Hartford, Conn.



Burke Quality

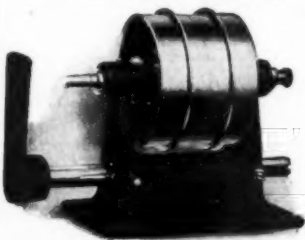
**Excels on
Fine Points**

Machines of
Burke Quality
are never built
with any name
cast on the
frame but our
own —

**BURKE
CONNEAUT
U. S. A.**

For Sale Everywhere

**This Tapping Machine
Now Has Greater Capacity**



Burke's

No. "D" Taps

5/8" Holes

in

Horseshoe

Steel

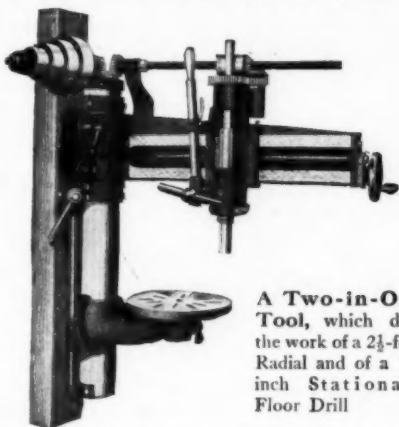
BUILT throughout with exceptional care, our several sizes give service in proportion. Accurate, rapid and convenient, they give solid satisfaction. No. "D" sells for \$35.

Send for details today.

The Burke Machine Tool Co., Conneaut, Ohio

A Post Radial At Moderate Cost

Furnished with either 2½ or 3½-ft. Arm



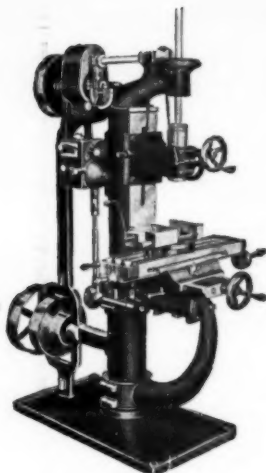
A Two-in-One Tool, which does the work of a 2½-foot Radial and of a 30-inch Stationary Floor Drill

MACHINE SHOPS, Garages, Bridge Works and Boiler Shops that have a wider range of drilling than can be handled to advantage on the upright drill press, find this a low priced machine to meet all their drilling requirements, and it is a top-notch all-around drilling machine for a shop of any kind. It is of ample power, and fully guaranteed.

IT DRILLS to the center of a 64-inch circle, with a 9-in. up-and-down traverse of spindle. The spindle has a quick return hand lever in addition to the regular hand feed lever.

Write for full description today. We can save you money.

Canedy-Otto Manufacturing Co.
Chicago Heights, Ill.



Look It Over

YOU OFTEN rack your brains with the ever present problem of reducing high machining costs in your shop. Now, instead of tiring your gray matter, take a few minutes and look over the

Knight Milling and Drilling Machine.

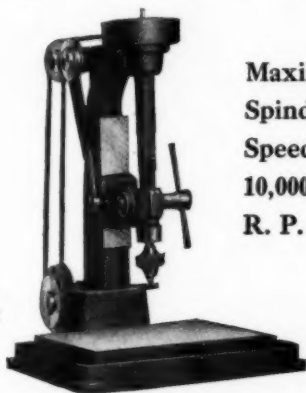
In convenience and all-around adaptability it equals two or three ordinary machines. It mills, bores and drills at any angle with only one setting of the work. It saves 20 to 50% of time on hard machining of all kinds. For dies, jigs, metal patterns, etc., it has no equal. Your choice of three sizes.

Send for Booklet giving many practical hints

W. B. Knight Machinery Company
St. Louis, Mo.

Save Money

with this
High Speed Drill



**Patents
Pending**

**Maximum
Spindle
Speed
10,000
R. P. M.**

**Double Your Production on Holes
up to $\frac{3}{8}$ " in diameter**

This machine is carefully and accurately built to give the greatest service. Equipped with Hess Bright Ball Bearings throughout.

Ask for Bulletin No. 502

Leland-Gifford Co.
Worcester, Mass., U. S. A.



ARMSTRONG "C" CLAMPS



LIGHT
DESIGN

Drop Forged
From Steel

All sizes

*Catalog for
the asking.*



HEAVY DESIGN

Armstrong Bros. Tool Co.

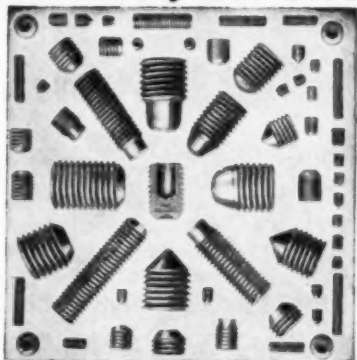
"The Tool Holder People"

308 N. Francisco Ave., Chicago, U. S. A.

Our complete line is on exhibition in Block 41, Palace of
Machinery, Panama-Pacific Exposition, San Francisco.



Allen Safety Set Screws

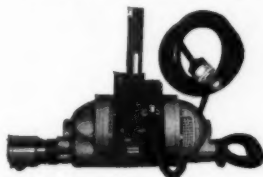


Send for circular No. 13 and sample screws (for testing).

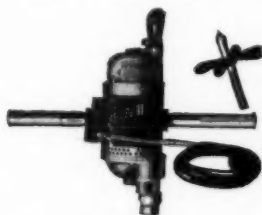
ALLEN MFG. CO., - Hartford, Conn.

Universal Motor Drills

For Use On Either Current



This drill is made in 3-16", $\frac{1}{4}$ ", $\frac{3}{8}$ " & $\frac{1}{2}$ " size. Gears run in grease. Motor air cooled, and is made to stand hard service. Sent on trial.



0 to $\frac{7}{8}$ Universal Drill

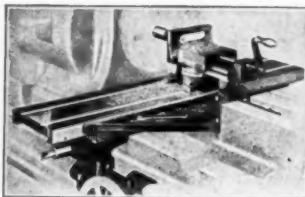
The motors used in these drills are Westinghouse motors, and operate on 25, 30, 40 or 60 cycle. 110 or 220 volts.

The U. S. Electrical Tool Co.
Cincinnati, Ohio

NEW YORK, 30 Church St. CHICAGO, 549 W. Washington Blvd.
BOSTON, - 12 Pearl St. ST. LOUIS, - 610 Commercial Bldg.

Stock carried at branch offices.

Milling and Gear Cutting on Your Screw Cutting Lathe



This is an easy operation with the Maforeto attachment, which does all a plain miller will do, and has a range and capacity equal in effectiveness to much higher cost machines. Complete with power, hand worm and lever feed, two sets of elevating blocks, indexing plates, swivel vise, driving dog, cleats and gibs.

Simple, Inexpensive, Good. Write for Details.

Maforeto Machine & Tool Co.

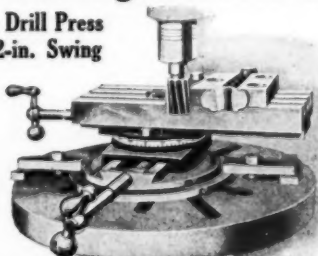
53 Gardner St., Worcester, Mass.

We also make Hand and Power Punches and Shears

Davis Milling Attachment

For Any Drill Press
14 to 42-in. Swing

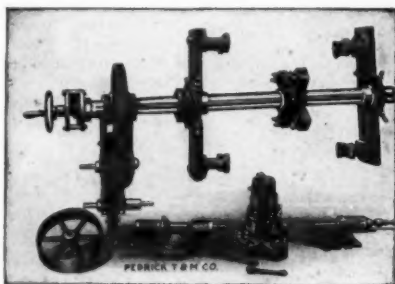
**Big
Economy
Big
Convenience
Small
Price**



The Davis Milling Attachment and Compound Table cuts keyseats straight or taper cuts the Woodruff or half moon keyseats perfectly; mills deep grooves or slots and cams; cuts clutch jaws, etc. Does 90% of the lighter jobs as well as a \$1,000 machine for die-maker, repair shop and garage. Less than \$75 buys this big economy.

Hinckley Machine Works, HINCKLEY, ILL.

Headquarters For Portable Boring Bars



Since the time Portable Boring Bars were first manufactured the Pedrick name has been intimately connected with them, and this association has been the means of making every improvement that is in evidence today on our type of machine.

For convenience, accuracy and durability you will find our equipment more than satisfactory and capable of saving time and money in such measure that the cost is largely returned at every using.

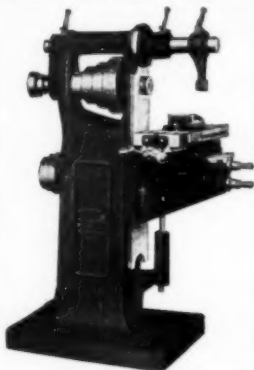
Write for a bulletin on this tool and our others:

Pipe Benders, Portable Millers, Crank Pin Turners, etc.

Pedrick Tool & Machine Co.

3644 N. Lawrence St., Philadelphia, Pa.

Rockford No. 0 Plain Miller



**With Power and Hand
Horizontal Feed**

Rigid, accurate and well proportioned, this miller is especially designed for light manufacturing. Note stiffness afforded overhanging arm by flanged support.

**Range of feeds,
22" x 6½" x 15"**

We solicit your inquiry

**Rockford Milling Mche. Co.
Rockford, Ill.**

Yes, Accuracy is Guaranteed With Dickow's 10-Inch Universal Index Centers



We are originators of design. You save from \$40. to \$90. on first cost, and many times that by their simple construction. Any ordinary workman can operate them.

Price Only \$85 Net,

**F. O. B.
Cars
Chicago®**

Get the Original—Don't Experiment

Sold by all dealers. Write today for particulars.

Fred. C. Dickow, 35 So. Desplaines St., Chicago, Ill.

Thor

Electric Drills

**Universal
Motor**

The only electric drill made with ball and roller bearings throughout.

*10 Days'
Free Trial*



**Can't
Be Stalled**

You can't stall a Thor Drill because the motor will pull a great deal more than its rated capacity. In addition to this it is lighter than any drill made of the same capacity. We guarantee 30% greater efficiency.

*Ask For
Bulletin HE-2*

Independent Pneumatic Tool Company

Chicago	New York	Pittsburgh	Detroit
San Francisco	Atlanta	Montreal	

In A Class By Itself

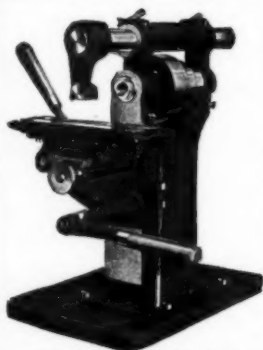


Is our New Model Bench Miller; because, we furnish with the machine our Quick operating Lever Vise, also Index Centers and two speed friction countershaft.

Send for circular

The Carter & Hakes Co. **West Winsted, Conn., U. S. A.**

AGENTS—for New England and New York, Hill, Clarke & Co.
WESTERN AGENTS—Marshall & Huschart Machinery Co.,
Chicago, St. Louis, Indianapolis.



Burke's No. 3 **Bench Millers**

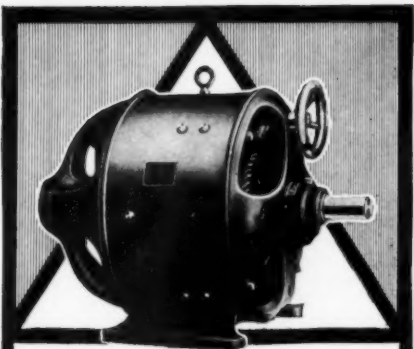
Are Seasoned Tools

Our system of tests insures accuracy, and our methods of construction make it permanent. Frames and parts are carried 6 to 8 months, after work begins on them, before the completed tools receive our final O. K., and all parts are finished and fitted with exceptional care.

Longitudinal feed, 6 in.;
traverse feed, $3\frac{1}{2}$ in.; vertical
motion of knee, 8 $\frac{1}{2}$ in.; table
surface, $3\frac{1}{2}$ x 12 inch.

Write for Catalog, which also shows larger and smaller sizes.

The Burke Machine Tool Co. **Conneaut, Ohio**



Wide Speed Ranges

In many cases where motors with speed ranges of 1:3 and 1:4 have been used in combination with gear changes the drive can be greatly simplified by using the wider range motors which the Reliance method of speed changing makes possible.

RELIANCE Adjustable Speed MOTORS

provide a practical means of obtaining ranges in running speeds as great as one to ten. You get any imaginable speed within the range of the motor. No electric controller is used and there is no current loss as the speed is varied.

Get the details in Folder 10 L

(We build Constant Speed Motors.)

**Reliance Electric &
Engineering Co.**

1050 Ivanhoe Road, Cleveland, Ohio

Van Dorn Portable Electric Machines

For shop convenience nothing approaches these sturdy machines for drilling and grinding. Take the tool where you want it, wherever a lamp socket is handy. That's not only convenient—but it cuts cost both in labor and power.

Van Dorn construction is practical—the result of our eleven years of experience as electric tool specialists. Every machine is made complete in our shop. Many sizes for all purposes.

Write today for complete catalog

The Van Dorn Electric Tool Co.

General Offices and Works
Cleveland, Ohio

Foreign Representative,
Alfred Herbert, Ltd,
Coventry, England;
Paris, France.

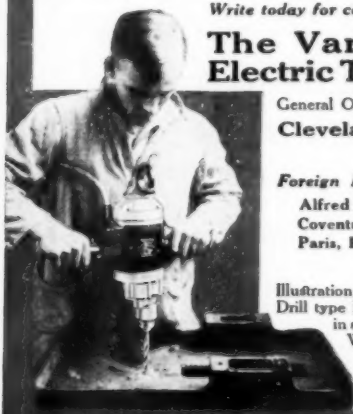
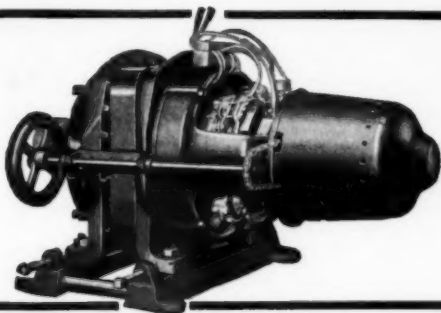


Illustration shows Universal Drill type DA-1. Drills $\frac{1}{2}$ " in steel—1" in wood. Weight 17½ lbs. Adapted for general drilling.



The KIMBLE

Adjustable Speed A. C. Machine Tool Motor

delivers an *infinite variety of speeds*—any desired speed, any moment—by the turn of the hand wheel.

The speed changes are not by "steps" but by easy gradations.

And the motor *holds* the speed at which it is set through all changes of load.

Furthermore the horsepower output is the same at all speeds—torque increasing as speed decreases.

All these conditions make the Kimble Adjustable Speed motor *the Ideal Machine Tool Motor for alternating current electricity.*

You abolish the belt-shifting nuisance; do away with speed-changing gearing; have no further use for motor generator sets—simply attach the motor to lathe,

drill press, grinder or any other tool on which speed control is important and the motor does the rest.

This is the first and only motor which can do these things with alternating current.

At the same time it is one of the simplest a. c. motors ever built—and sturdiest.

Let us send you *one* motor for 30 days' test at our risk, on any lathe or tool in your own plant. State size of motor desired, and voltage and cycles of current.

Sizes $\frac{1}{2}$ - $\frac{3}{4}$ - 1 - $1\frac{1}{2}$ - 2 - $2\frac{1}{2}$ h. p.—all equipped with S.K.F. Ball Bearings.

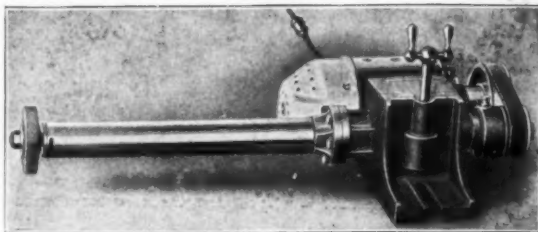
Circular on request



The Kimble Electric Co.

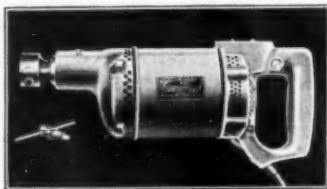
2409 W. Erie Street
Chicago, Ill.

The New "HISEY" Precision



A Combination Internal and External Grinder

The unique construction allows the machine to be operated in any position with the work in full view and accessible at all times. Bearings adjusted in either direction from the outside of the housing without removing one single part of the machine or grinding wheel. We make a smaller size particularly adapted for tool-room and die work.



Hand Drill

All machines operate

Most complete line of Hand and Breast Drills, Radial Drills, Buffers, Bench and Pedestal Grinders, Beveling

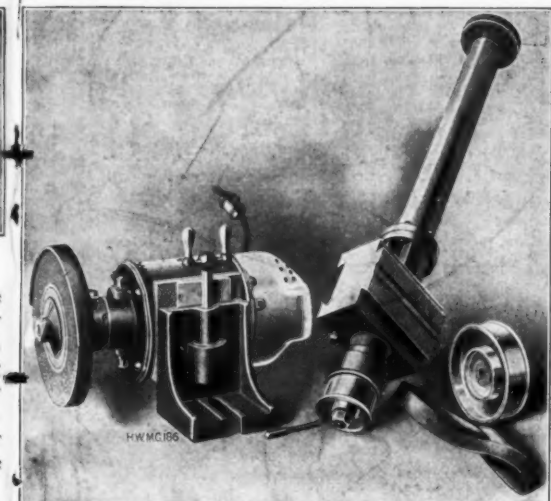
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The Hisey-Wolf Machine Company

New York Office, 50 Chambers Street

With electric
direct drive
of all
planers

on Portable Electric Grinder



HWMC.196

With extension removed and with angle plate fitted directly to housing for external and surface grinding of all kinds when used in connection with a lathe, planer, milling machine or boring mill.

operated from any incandescent lamp socket

radial Drills, Sensitive Bench Drills, Aerial Grinders, Beveling and Glass Blocking machines.

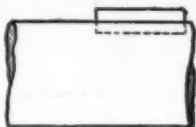
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Company, Cincinnati, Ohio

50 Church Street



"Whitney" Key



The Old Way

Why Put Up With The Old Way?

Why stick to the old, costly, inefficient, unmechanical and dangerous way of keyseating when there is a better?

"Whitney" Keys and Cutters

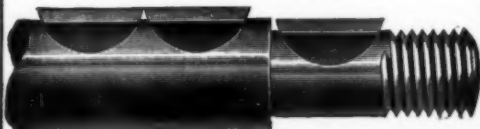
abolish all the trials and annoyances incident to former methods. Note these superiorities:

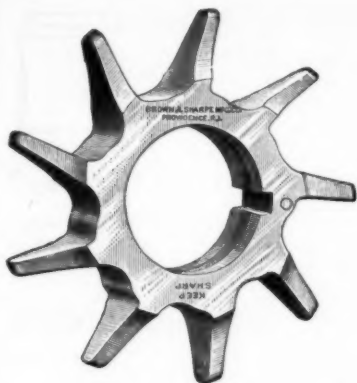
1. Key is set firm and deep and can not roll out when shaft meets sudden jerks and jars.
2. Key is not placed at end of shaft, making it unnecessary to turn the shaft down to level of the bottom of the seat, when a nut is put on the end of a shaft.
3. Keyseating done by ordinary labor. No skilled labor required.
4. It's done more rapidly.

Send for Catalog No. 10

The Whitney Mfg. Co.
Hartford, Conn.

Chains—Keys—Hand Milling Machines





Are Your Gear Cutters Serving You Like This?

Here is a regular *B. & S. Gear Cutter*, which, in the large shops of a Western Manufacturer, cut through thousands of feet of the toughest materials. It continued to work efficiently and accurately until the teeth were ground to the back edge, —the maximum of service.

That's the service Brown & Sharpe Gear Cutters are made to give. Because we have always aimed for the highest in accuracy, uniformity and reliability, they are called the standard for accurate gear work.

Brown & Sharpe Mfg. Co.
Providence, R. I.

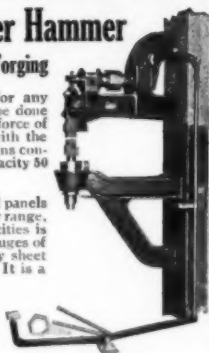
"Quickwork" Power Hammer

For Metal Working and Light Forging

Wonderfully handy and efficient for any work, including forging that can be done with a light power hammer. The force of the blow is accurately controlled with the foot lever, while its rapidity remains constant, a feature which gives it a capacity 50 per cent greater than any other.

Designed for convexed or concaved panels for auto bodies, it has a much wider range, and in its various sizes and capacities is adapted to working the heavier gauges of metal used by coppersmiths, heavy sheet iron workers, boiler makers, etc. It is a great time saver.

My "Quickwork" Catalog of Rotary Shears and Sheet Metal Machinery is Yours for the Asking. Write for it.



H. Collier Smith

815 Scotten Ave., • • • Detroit, Mich.

Beaudry Hammers

For General Forging

**Saves Fuel, Time
and Labor.**

**Cuts Forging Costs
in Two.**

Belt or Motor Driven

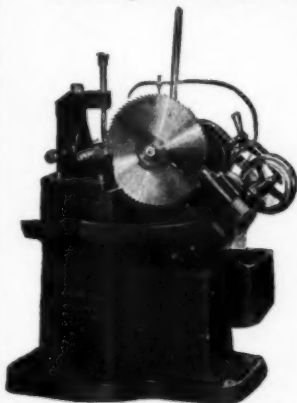


Beaudry & Co., Inc.

141 Milk St., Boston, Mass.

Cochrane-Bly Cold Saws

For Rapid and Accurate Cutting

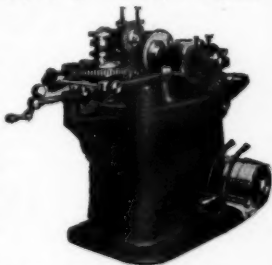


Their rigid build and freedom from lost motion insure great accuracy and smooth cuts and permit the use of maximum cutting speeds. Their simplicity and convenience enable stock to be handled in the easiest and quickest way. They reduce the cost of the accurate cutting of machinery and tool steel. Made in five sizes. Cut shows

No. 2-B., with capacity of $4\frac{1}{2}$ " rounds, 4" squares.

Sharp Saws

pay good dividends by increasing production. Our sharpener grinds and bevels at one operation, putting the blade in shape to give the best results. Two sizes. The one here shown sharpens 10 to 15-in. blades.



Write for interesting information on cold sawing

Cochrane-Bly Company

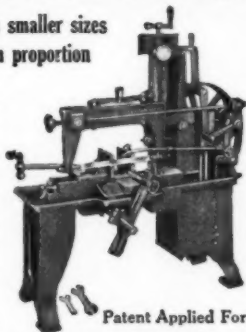
Rochester, New York, U. S. A.

Only 10 Minutes to Cut 6-in. Steel

**The Marvel No. 4 cuts smaller sizes
of cold rolled steel in proportion**

Cuts on the draw stroke and lifts free of the cut on the return. A graduated feed wheel gives any desired pressure on the saw blade.

Machine stops automatically when piece is cut off, and can also be set to stop at any desired depth in the cut. It embodies speed, accuracy and expert workmanship. We also make other hack saws, punches and shears.



Write for Circulars

Patent Applied For

**Armstrong-Blum Mfg. Co., 341 N. Francisco Ave.
CHICAGO, ILL.**

Peter Bros. Abrasive Cutter

Makes a Straight, Smooth Cut

through high-speed or any hardened steel, broken reamers, taps, forming tools, etc., or through copper or brass tubing, aluminum or other relatively soft metals, so quickly that it costs next to nothing. Only 1-16th inch waste. No loss in grinding rough or broken ends to shape.

8" Size, \$16.50. with C. S.

Splendid for tool room. Cuts high-speed steel up to 4" square.

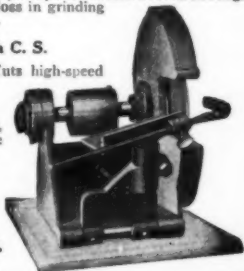
12" Size \$42, with C. S.

Cuts up to 2 1/2" diameter, round or square, at any angle up to 45 degrees.

15 Days' Free Trial

Write us or ask your dealer

**PETER BROTHERS MFG. CO.
115 Railroad St., Algonquin, Ill.**



The Newly Improved Racine High Speed Metal Cutting Machine

No. 2A—Bull Dog Type—Eats Steel



"It's a Wonder. We've Junked our other Machines"

That is what one concern wrote to us when, after 30 days free trial, they paid for their Racine High Speed Metal Cutting Machine.

Judge the Racine by the work it does, by its speed, the saving you make and the quality of the work it turns out. It has from 5 to 10 times the capacity of an ordinary hack saw. Has a system for lubricating the blades and lifting them on the return stroke which saves the blades and increases the output.

Take one on 30 days' trial. If it does not make good send it back. Write for details—now.

Racine Tool & Machine Co.

1500 Junction Ave. S., Racine, Wis., U.S.A.



Find Out!

Vulcanized Fibre for Machine Parts

may be much better and cheaper
than the materials you are using,
and it's worth investigation.

Let us figure on these parts for your machines:

Gears
Frictions
Washers

Bushings
Thrust Washers
Guide Collars

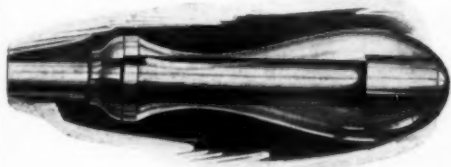
Discs
Handles
Etc., Etc.

Or send us blue prints or samples of special parts.

Write for Catalog, which tells the story of the original Vulcanized Fibre and its uses, and contains price list on stock parts, sheets, tubes and rods.

American Vulcanized Fibre Co.

560-570 Equitable Bldg., Wilmington, Del.



Quick Action

This is what we call this new Machine Handle. Attached to any power tool, especially the heavier types; adjustments are made with more speed and less effort.

All kinds of standard and special Handles from steel for power tools and similar purposes.

Send for Catalogue and prices

The Cincinnati Ball Crank Co.

Oakley, Cincinnati, Ohio

Terrell's Unit System
The Lockers of Economy
Made of Steel for Every Requirement



Lockers are essential in the modern plant, and steel lockers are rapidly replacing wooden ones because of their greater economy.

Wooden lockers cost only a trifle less to install, and there the saving stops short.

Steel lockers, on the other hand, save space, fire risk, insurance and repairs; and to furnish human beings with safe and sanitary receptacles for their belongings has a real dollars-and-cents value to the employer.

Terrell's Unit System offers a further economy by making unnecessary the anticipation of future wants. Start with what you need and let your outfit grow with your requirements, without having to tear down and build up again.

Get our figures, anyway, on the units you need now

Terrell's Equipment Co.

Hall & Division Sts.,

Grand Rapids, Mich.

And ask about our Adjustable Unit System of Shelves and Bins, which are easily changed from one to the other, or removed, extended or reduced to fit changing conditions.

"CUSHMAN" CHUCKS

AND
FACE PLATE JAWS

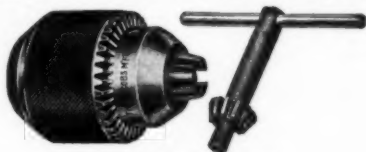
A new line of Chucks for Extra Heavy Service and Special Purposes. Both Universal and Independent.

CUSHMAN BLUE LINE CHUCKS (ALL STEEL)

Write for Special Catalogue No. 38

The Cushman Chuck Co.
Hartford, Conn., U. S. A.

What Do You Think About It?



Patented Sept. 16, 1902

More than 183,000 Jacobs Improved Drill Chucks have been purchased. Our customers of 1903 have since continuously and increasingly purchased Jacobs Improved Drill Chucks. More Jacobs Improved Drill Chucks were purchased during April, 1915, than during any previous month.

We think this record is the strongest possible evidence of the Jacobs Improved Drill Chuck's recognized merit, and our liberal, honorable dealings. What Do You Think About It?

Our new illustrated catalogue sent upon request.

The Jacobs Manufacturing Co.
Hartford, Conn., U. S. A.

Union

Geared Scroll Combination Chucks



Made with either three or four jaws.

This is a **Combination** Chuck, that is, it can be operated as an Independent or a Geared Scroll Universal.

It is extra heavy—and is made strong and durable, and is recommended for heavy work. Also made with **steel body**.

Union Manufacturing Co.

New York Office,
26 Cortlandt St.

New Britain, Conn.

Makers of a Complete Line of Chucks

Burnishes 100 Small Parts

At the Cost of Buffing One



The
Abbott
Burnishing
Barrel

In the burnishing of small metal parts, the Abbott Process effects a most remarkable saving, in some cases amounting to 99 cents on the dollar, and it improves the quality of the work. It makes a smooth, glossy surface, without bending, marring or removing material.

Write for free Booklet and send us samples for burnishing and cost estimates. Write today.

The Abbott Ball Company

Elmwood District, Hartford, Conn.

We also make Steel Bearing Balls. Let us quote. What size?

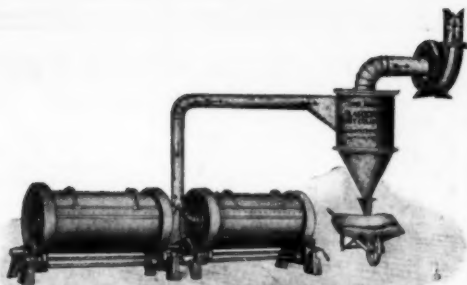
"Back in '86,"

says one of our customers, "I purchased one of the **Sweetland Chucks**. It is still in service and has always given excellent satisfaction. In '86 my first order for Sweetland Chucks was placed and since that time, whenever I needed chucks, Sweetlands have always been ordered."

**Made for Service.
Let us quote you.**

**The Hoggson &
Pettis Mfg. Co.**

New Haven, Conn., U.S.A.



With Nature's Aid

The Morse is a Sweeping Success



The Morse Dust Collector cooperates with nature—because operated on the “rarefied” or partial vacuum principle. Hence the air is *drawn* through the collector, not pushed through as in old style machines. This removes the dust before the air reaches the fan, and the latter is not worn out by the abrasion of fast-moving particles of grit and sand.

The Morse reduced the horse power needed to operate a certain department to nearly one-half. Besides being highly economical, it is thoroughly efficient and long lived, even with the most cutting and difficult dust. It has the endorsement of many expert engineers.

Let us send you Booklet and list of prominent users in all parts of the country.

The Knickerbocker Company
Jackson, Michigan

Pattern Shop Machinery

Special Prices if you refer to this ad.



Band Saws

Chicago No. 00 27 in. Wheels

" No. 0 32 " "

" No. 1 36 " "



Saw Tables

Chicago No. 5 Stationary Table

" No. 9 Tiling Table

" No. 10

Boring attachment if wanted.



Jointers

8 in., 5 and 6 ft. tables and guard.
12, 16, 20, 24 and 30 in., 7 ft. tables
and guard.

Trimmers, Lathes, Core Box Tools, etc.

Ask for full descriptions

Chicago Machinery Exchange

1214-1228 Washington Boulevard, Chicago

Machine Tool Makers

should investigate carefully the facilities offered by **Hitchcock's Machine Tool List** for reaching this trade in all parts of the country. Its circulation is specialized to completely cover *every line of manufacture* in which machine tools are used—as well as all railroad and other tool-using shops—with a thoroughness and effectiveness not equalled by any other advertising medium.

Well Dressed Letters

Have the Greatest Selling Force

The days of the showy salesman are about over, and the days of the shabby salesman have never dawned.

The modern efficient salesman is a man of force, and his well-ordered apparel reflects the well-ordered brain.

Steel Die Embossed Stationery

Is to the Letter what Good
Clothes are to the Salesman

It does not lend itself well to the circus-poster style, nor is it ever shabby. It has that rich, neat appearance which at once gives the impression of solidity behind it.

You cannot use well-dressed salesmen to see *every* prospective customer. It is left to your *letters* to make the desired impression in scores of places where an order is possible.

And what is there so impressive for that purpose as Steel Die Embossed Stationery?

*It is probably not as expensive as you think
Write for free Specimen Book and prices*

American Embossing Co.

192-96 Seneca St., Buffalo, N. Y.

H.B.UNDERWOOD

& CO. EST.1870



“THERE are moments in every man's life,” remarked Tim Wise, as he fumbled through his pockets for a match, “when a pipe that'd light itself would be a great convenience. And it's much the same with repair shops; often there's just some special kind of tool that would cut the work in half—if you only had it. In cases like this—and I've come across more than one of them—I call on those Underwood people. They're equipped to design and make special tools or attachments in short order. All you have to do is give 'em an idea of what you want, and the job as good as done.”

Send for free book “Helpful Hints”

PHILADELPHIA, PA.

Second-Hand Machinery.

Lists of second-hand machinery, either for sale or wanted, will be published under this heading at the rate of **40 cents a line**, across the page, each issue, with a minimum charge of **\$4.00**. Sub-headings are counted as one line, but the name and address of advertiser are not included in the space charged for.

Write directly to the parties offering the machines for sale for prices and full descriptions. If you do not find what you require, use the post card inclosed with each book to make known your wants to the publisher.

FOR SALE BY

Clark Machinery Co.,

717 Frankfort Ave., N. W., Cleveland, O.

Automatic, 1" Cleveland.
Blowers, No. 1 Root. (2).
Boring mill, 34" Colburn.
Bulldozer, No. 4.
Cutting-off machines, 2"-2½" and 3".
Drill, 2-spindle Foote-Burt.
Drill, 1-spindle Henry & Wright.
Engine lathe, 14"x8" Cisco, c. r.
Eng. lathe, 20"x8" New Haven, c. r.
Eng. lathe, 24"x10" New Haven, c. r.
Eng. lathe, 24"x18" Schumacher-B.
Grinder, plain, No. 1 Morse.
Grinder, disc, No. 8 Besly.

Grinder, piston ring, Heald.
Hammers, helve, 25-40&60 lb. Bradley
Keyseater, No. 0 Mitts & Merrill.
Lathes, Bridgeport auto. thread'g (4).
Miller, plain, No. 2 Becker-B.
Miller, universal, No. 1 B. & S.
Miller, No. 3 Burke (new).
Miller, universal, No. 3 LeBlond.
Screw machine, No. 1 W. & S.
Screw machine, 2" Cleveland auto.
Screw mch., 2½" Hartford auto.
Shaper, 16" Smith & Mills.
Spinning lathe, 23" Frybail.

FOR SALE BY

McCoy & Brandt,

410 House Building, Pittsburgh, Pa.

Band saw, 36" tilting table.
Bulldozers, W-W 1, 2, 4 and 5.
Crane, 40-ton, 60' span, 220 v., d. c.
Drill presses, 14" sensitive.
Gas engine, 20 h. p. Ajax.
Grinder, 156" Bridgeport auto. knife.
Hammer, upright strap, 75 lb. Bradley
Hammers, board drop, 400, 500, 600,
800, 1200, 1500, 3000 lb.
Hammers, steam, 600, 800, 1000, 1300,
1500, 2000, 3500 lb.
Motors, 1 to 600 h. p., a. c. & d. c.

Nut tapper, double head, 2" Acme.
Pipe machines, 2", 4", 6", 8".
Planer, 30"x30"x10' Gray.
Presses, straight sided, 4" stroke,
6000 lb.
Press, 55½" Toledo duplex, 4" stroke.
Press, Bliss No. 405 spl. toggle.
Punch, multiple, 45" Niagara 65-C.
Shear, 60" Smith "Quickwork" rotary.
Shears, squaring, 96", 144".
Shears, guillotine type, 4", 5" sq.
Turret lathes, 16"x8", h. s.

All good. Prices attractive.

FOR SALE BY

Peninsular Machinery Co.,

110 Beaubien St., Detroit, Mich.

Beading machines, hand and power.
Boring mill, 52" Gisholt, dbl. head.
Cock Grinder, 6-sp. Milwaukee.
Cold saw, No. 1½ Paragon, cap. 6x6.
Drill press, 4-sp. W. F. & J. Barnes.
Drill, 4-sp. Foote-Burt, rail.
Gear cutter, Flather.
Gear hobbors, 14" and 17" Lees-B.
Grinder, surf., Walker, platen 25"x6".
Grinder, Crescent, 18" disc.
Keyseater, No. 1 Davis, 20 cutters.
Key lathe, 16", double end.
Lathes, 2"x24" Jones & L... turret.

Lathe, No. 3 Warner & S., hol. hex.
Lathe, No. 1 Am. Fox, slide rest.
Press, power, No. 7 Perkins, model A.
Press, power, No. 5 Perkins, geared.
Press, power, No. 30 Perkins, o. b.i.
Radial drill, 4" Fosdick, speed box.
Radial drill, 36" American, sensitive.
Radial drill, 6", wall type.
Rolls, 36" and 48", hand power.
Saw filer, Black Diamond.
Shaper, 28" Smith & Mills.
Sprue cutter, Middleditch.
Squaring shear, 36" Queen City.

All for immediate delivery. Write for complete description and price.

SECOND-HAND MACHINERY

FOR SALE BY

The Strong, Carlisle & Hammond Co., Cleveland, O., Detroit, Mich.

ENGINE LATHES.

- | | |
|--|---------------------------------------|
| 13x6 Springfield, c. r., h. s. | 16x6 Hamilton, q. c. g., c. r., h. s. |
| 14x6 Goddard, r. & f. rest, h. s. | 16x6 Reed, r. & f. rest, h. s., (4). |
| 14x6 Sebastian, c. r., h. s. | 16x8 P. & W., with taper, (2). |
| 14x6 Monarch, c. r., h. s., d.b.g., (2). | 20x11 Star, c. r., h. s. |
| 14x6 Porter, pl. r., h. s. | 20x12 Davis, c. r., solid spindle. |

FOX LATHES.

- | | |
|--|-----------------------------|
| 14" sq. arbor, set over tail stock, (2). | 20" American, univ. turret. |
| 16" Springfield, set over turret. | |

TURRET LATHES.

- | | |
|---|---|
| No. 1 Warner & Swasey, 10" swing. | 24"x26" P. & W., turret, bar fd., hvy. |
| 11" Bardons & Oliver, pl. hd., (3). | 24" Foster, ring turret, 15" bar feed. |
| 16" American, f. g. head. | 21" Steinle, gd. hd., 4 1/2" sp. hole, hvy. |
| 16"x6" American, eng. turret, q. c. g. | No. 6 B. & O., f. g. h., 3 1/2" sp. hole, hvy. |
| 17"x8" Greaves & Klusman, eng. tur. | No. 6 B. & O., f. g. h., with drilling slide instead of turret. |
| 15" Dreses, f. b. g., (2). | |
| 14, 24 and 34" Potter & Johnston automatic, (2 each). | |

SCREW MACHINES.

- | | |
|------------------------|----------------------|
| 8" Garvin. | 4" Bardons & Oliver. |
| 11-16" Brown & Sharpe. | 4" Wells. |

GRINDERS.

- | | |
|-------------------------------|----------------------------------|
| No. 11 Brown & Sharpe, plain. | No. 1 Cincinnati, cutter. |
| 14"x7 1/2" Norton, plain. | No. 60 Heald, internal cylinder. |
| No. 2 Landis, universal. | No. 2 Brown & Sharpe, internal. |
| No. 2 Bath, universal. | No. 1 Landis, internal. |
| No. 2 Brown & Sharpe, cutter. | W. & S., cock, (2). |

MILLING MACHINES.

- | | |
|----------------------------------|---------------------------------------|
| No. 2 Garvin, Lincoln, (2). | No. 2 Brown & Sharpe, plain. |
| Hendey, Lincoln, q. c. g., (2). | Nos. 2 and 3 Cincinnati, plain. |
| No. 7 Becker, Lincoln, (3). | No. 3 Becker, plain. |
| No. 12 Pratt & Whitney, Lincoln. | No. 4 LeBlond, plain. |
| No. 12 Brown & Sharpe, plain. | No. 3-B Brown & S., pl. hvy., s.p.dr. |
| No. 1-Y Brown & Sharpe, plain. | No. 2 Cincinnati, universal. |
| No. 14 Brown & Sharpe, plain. | No. 4 Cincinnati, vert., s. p. drive. |

UPRIGHT DRILLS.

- | | |
|---|---------------------------------|
| Sensitive drills, (6). | 24" and 36" Cincinnati, gd. fd. |
| 20" w. & l. fd., b. g. and p. fd., (8). | 28" Aurora, tapping attachment. |
| 24" Cincinnati, sliding head. | 32" and 36" Prentice. |

RADIAL DRILLS.

- | | |
|-------------------------------------|------------------------------------|
| 50" Midland. | 34" Hamilton. |
| 3" Prentice, s. p., gear box drive. | 4" Fosdick and Bickford, (1 each). |

MULTIPLE DRILLS.

- | | |
|-----------------------|--|
| 1" Baush, 12 spindle. | 2, 4 and 6 spdl., sensitive, (2 each). |
| P. & W., 12 spindle. | 5 spdl. Detroit, horiz., semi-auto, (2). |

GEAR CUTTERS.

- | | |
|-----------------------------------|------------------------------------|
| 14" Lees-Bradner gear hobber. | 36" Cincinnati, spur. |
| 32" Whiton, spur, bevel and worm. | 36" Fellows gear shaper. |
| 36" and 40" Gould & E., spur. | Pinion cutters, Dwight-Slate, (2). |

PLANERS AND SHAPERS.

- | | |
|-------------------------------------|-------------------------------------|
| 24"x24"x6" Ohio, 1 head. | 16" McGregor-Gourlay, b.g., crank. |
| 26"x26"x8" Detrick & H., open side. | 20" Kelly, plain crank. |
| 30"x30"x8" Cincinnati, 1 head, (2). | 24" American, b. g., crank. |
| 36"x36"x10" Gleason, 2 heads. | 20" Hendey, friction. |
| 16" American, b. g., crank, (3). | 15" and 34" Hendey, fric. (3 each). |

PRESS ES.

- | | |
|---------------------------------|--|
| C-4 Ferracute, inclinable. | Ferracute, style D-2, dbl. actg., inc. |
| No. 4 Consolidated, inclinable. | No. 4 Massillon, trimming. |

BORING MILLS.

- | | |
|--|------------------------------|
| 30" s. h., tur., Bul., Baush, Colb. (3). | 36" Bullard, double head. |
| 34" s. h., tur., Colburn, Gisholt. | 51" Niles, double head. |
| 36" King, single head turret. | 60" Industrial, single head. |

BOLT CUTTERS.

- | | |
|--------------------------|------------------------|
| 14" Morgan, single head. | 24" Acme, single head. |
|--------------------------|------------------------|

Our Stock is changing daily. Write, giving specifications of requirements.

SECOND-HAND MACHINERY

FOR SALE BY

Marshall & Huschart Machinery Company,

Chicago

Indianapolis

St. Louis

17 S. Jefferson St.

334 N. Capitol Ave.

915 Chemical Bldg.

ENGINE LATHES.

9" Rockford, compound rest.
13"x6' South Bend.
14"x6' Bradford, compound rest.
14"x6' Blaisdell, comp. rest, taper.
14"x6' Springfield.
14"x6' Flather, plain rest, chuck.
14"x6' Reed, rise and fall, taper.
14"x6' Porter.
14"x8' Blaisdell, compound rest.
15"x8' Hamilton, quick change gears, taper.
15"x6' Bradford, with taper.
15"x6' Prentice, double back gears.
16"x8' Putnam, compound rest.
16"x9' Reed, plain rest, taper.
18"x6' Dietz, Schumacher & Boye, compound rest.

18"x5' Putnam, compound rest, raised to swing 21"⁶.
18"x8' Bradford, compound rest.
18"x10' Walcott, with chuck.
18"x11' Lodge & Davis, with boring equipment.
18"x14' Lodge & Davis, plain rest.
20"x8' Bradford.
20"x10' Lodge & Shipley, pat. head.
20"x10' Flather, power feed turret on bed, chuck.
21"x11' Lodge & Davis, comp. rest.
24"x16' four step cone.
25"x20' Sellers, compound rest.
30"x16' Harris.
36"x16' Fifield.
42"x20' Fifield.

TURRET LATHES AND SCREW MACHINES.

2" Jones & Lamson, turret lathe, Lodge & B., Fox monitor lathe.
12" Foster & Kimball No. 3.
16" Pratt & Whitney, back geared.
16" Warner & Swasey, plain head.
18"x6' Pratt & Whitney.
18"x4' Gray.
2"x24" Jones & Lamson, flat turret.

28" Pond rigid turret lathe, with taper attachment.
42" New Haven heavy turret lathe.
4" Garvin screw machine.
No. 1 Bardons & Oliver.
No. 4 Windsor, power feed to turret.
2" American, friction geared head.
8" Cleveland automatic.

GEAR CUTTERS.

24" Gould & Eberhardt gear hobber.
22" Gould & Eberhardt spur and bevel gear cutter.
30" Gould & Eberhardt new type, spur gear cutter.
36"x9" Gould & Eberhardt, new type, spur gear cutter.
50"x10" Gould & Eberhardt, spur and bevel.
26"x10" Cincinnati spur gear cutter.

No. 13 Brown & Sharpe, spur and bevel.
36"x10' Cincinnati spur gear cutter.
30" Flather spur gear cutter.
15" Gleason bevel gear planer.
36" Fellows gear shaper.
6" Bilgrim gear generator.
16" Bilgrim gear generator.
Norris 4-spindle multiple semi-automatic, spur & bevel, cap. 10"x14".

MILLING MACHINES.

Pratt & Whitney Lincoln pattern.
No. 2 Hisey plain.
No. 2 Kempsmith plain, belt power feed.
No. 15 Garvin plain.
No. 24 LeBlond plain.
No. 3 LeBlond plain.
No. 3 Oesterlein plain.
No. 1 Cincinnati universal, cone.

No. 2 Cincinnati universal, cone.
No. 3 Cincinnati plain, cone.
No. 4 Cincinnati plain, cone.
No. 2 Becker-Brainerd universal, back geared, all geared feeds.
No. 5-B Becker plain, all feed, with vertical attachment.
Newton Duplex, table 6'5"x12³".

DRILLING MACHINES.

10-spindle Natco automatic multiple, capacity ten 5-16" drills.
2-spindle Barr sensitive.
20" Mechanics upright.

3-spindle Rockford gang, three spindles power feed, one b. g., 20".
24" Sibley & Ware, sliding head.
12-spindle Western multiple.

RADIAL DRILLS.

24" Fosdick plain, swinging table.
30" Fosdick plain.
30" Gang, plain.

4' Cincinnati, Bickford, plain regular, gear box drive.

Write us for what you need. We have many others.

SECOND-HAND MACHINERY

FOR SALE BY

W. L. Perkins Machinery Co.,

30 Church St., New York

LATHES.

16"x8' Reed, compound rest.
20"x8' Pond, compound rest.
20"x10' Putnam, compound rest.

28"x14' New Haven, comp. rest.
28"x16' Wright, compound rest.
30"x12' Putnam, compound rest.

MISCELLANEOUS.

Boring mill, 30" Bullard, tur. head.
Keyseater, No. 1 Baker Bros.
Milling mche., No. 3 Becker-B univ.
Milling mche., No. 2 B. & S. univ.
Pipe machine, 3 1/2" Saunders.

Planer, 25"x25"x4' Sellers.
Planer, 32"x32"x8' Pond.
Planer, 42"x42"x10' Niles.
Shaper, 12" Walcott.
Shaper, 28" Cincinnati, triple grd.

FOR SALE BY

The Mott & Merryweather Machinery Company,
707-715 Lakeside Av., N. W., Cleveland, Ohio

Branches: Detroit, Cincinnati, Pittsburgh.

BORING MILLS.

No. 1 Lucas, table type.
No. 21 Lucas, table type.
4" bar Bement-Miles, table.

30" Bullard, vertical, (3).
34" Colburn vertical.
16" Pond double head.

BROACHING MACHINES.

No. 2 Lapointe, (3).

No. 3 Lapointe.

DRILLS, UPRIGHT.

24" Aurora.
32" Aurora.
32" Pond, sliding head.

34" Barnes.
40" Aurora.

DRILLS, SENSITIVE AND MULTIPLE.

12" Redington.
12" 4-sp. Barr, pl. bearings.
12" 4-sp. Pratt & Whitney.
13" LeBlond, table and c. s.
13" Redington, drill chuck and c. s.
14" No. 2 Barr, (2).
14" Foote-Burt, 3-spindle.
14" Foote-Burt, 6-spindle.

14" Woodward & Rogers, bench, with chuck and c. s.
16" No. 7 Barr.
No. 3 Baker 2-spdl. cylinder borer, with adj. center distance.
3-spindle Baush.
No. 43 Gardam 8-sp., adj., 1/2" cap.
8-sp. Moline No. 31, rail.

GRINDERS.

12" & 14" grinder stands, (5).
No. 1 Cincinnati, cylinder and gear tooth grinding attachments.
No. 1 LeBlond cutter grinder.
No. 1 Leland & Falconer, w. g.
No. 2 Leland & F., dbl. wheel, wet, 24"x14" wheels.

24" Yankee drill grinder.
No. 300 Heald, ring, hand feed.
No. 210 Heald, wet grinder.
No. 3 Landis.
10x36 Landis, plain.
12" wheel Pratt & Whitney, surface.

MILLING MACHINES.

Brainard, Lincoln type.
No. 2 Brown & Sharpe, cone driven, heavy slotting attachment.

No. 3 Cincinnati plain.
No. 13 Pratt & W., Lincoln type.
No. 4 Cincinnati, plain, geared feed.

LATHES.

18"x8' Reed, taper att.
20"x10' New Haven.
22"x16' David Pond.
22"x12' Pond.
26"x18' Grant & Bogart, taper att.
36"x20' Pittsburgh, triple geared.
39" swing roll lathe.

42"x8' patternmakers', iron bed.
50"x18' Fifield.
60"x43' Roche engine lathe.
60"x46' Hewes & Phillips, comp. r.
60"x43' Hewes & Phillips, comp. r.
10"x43' Bement-Miles crankshaft turning lathe.

PLANERS.

28"x28"x5' New Haven.
28"x28"x6' Pond.
30"x30"x8' Lodge & Davis.

30"x30"x10' Whitcomb.
38"x38"x8' Gleason, two heads.

TURRET LATHES AND SCREW MACHINES.

1 1/2"x4" Brown & Sharpe.
1 1/2" Cleveland automatic turret lathe.
No. 2 Warner & Swasey screw mch.
1 1/2" Pratt & Whitney.

3 1/2" Cleveland automatic.
15" Bardons & Oliver screw mche.
No. 2 Foster.

SECOND-HAND MACHINERY

FOR SALE BY

Prentiss Tool & Supply Co., New York, Boston, Buffalo, Syracuse.

BORING MILLS.

30" Bullard, turret head.	5" bar Beaman & Smith, horizontal.
2 sp. Foote-Burt, cylinder.	No. 2B Binsse, horizontal.
48" Bement, car wheel.	No. 5C Binsse, horizontal.
44" Colburn, vertical.	J 4" Detrick & Harvey, vertical.

DRILLING MACHINES.

2 sp. Henry & Wright.	25", 28" & 30" Snyder, sliding hd.
3 sp. Avey, high speed.	24", 28" and 32" Cincinnati.
20" & 23" Barnes, back geared.	30" and 48" Bickford radials.
31" Barnes, sliding head.	60" & 48" Bement radials.

GRINDERS.

No. 1 Landis, universal.	No. 4 Besly, disc.
23" disc grinder.	No. 210 Heald, piston ring.
18x96 Norton.	No. 1 Cincinnati, cutter.

MILLING MACHINES.

No. 5 Hendey, Lincoln.	No. 5 Becker, vertical.
No. 2 LeBlond, plain.	No. 24 Brown & Sharpe, plain.
No. 3 P. & W., hand.	No. 4 Cincinnati, plain.
No. 5 Brown & Sharpe, plain.	No. 3 Cincinnati, plain.

LATHES.

9"x44" Star, foot power.	18"x14" Blaisdell, c. r.
11"x5" Prentice Bros., c. r.	20"-42"x12" Fay & Scott.
13"x5" Blount speed lathe.	24"x12" Draper, c. r.
14"x6" Fay & Scott, c. r.	28"x16" Pond, c. r.
14"x8" Lodge & Shipley, patent hd.	28"x22" New Haven.
16"x8" Porter, c. r., p. c. i.	27"x12" Flather, c. r.
18"x6" Hendey.	30"x22" LeBlond, c. r.
18"x10" Draper, c. r.	36"x16" Putnam, c. r.

PLANERS.

15"x15"x 3' Pratt & Whitney.	48"x48"x10' Powell, motor drive.
30"x30"x10' Bement, 2 heads.	42"x42"x14' Woodward & Powell,
36"x36"x 8' Pond, 1 head.	4 heads.
36"x36"x12' Lodge & Davis, 2 hds.	60"x50"x10' Gray, 2 heads.
42"x42"x14' Pond, 2 heads.	71"x69"x14' Pond, 2 hds.

PRESSES.

No. 4 Mossberg & Granville.	P-2 Ferracute.
No. C-82 Ferracute, notching.	E 12 Ferracute, inclined.

SCREW MACHINES.

No. 3 P. & W. screw machine.	3" Bardons & Oliver.
2x24 J. & L., cone type.	2x24 Jones & Lamson.
18" Warner & Swasey Fox monitor.	3x36 Jones & Lamson.
24" American, heavy.	

SHAPERS.

8" Gould & Eberhardt.	26" Gould & Eberhardt.
16" Gould & Eberhardt.	28" Juengst, crank.
24" Gould & Eberhardt.	14" Steptoe, crank.

MISCELLANEOUS.

Angle shear, 6" Hilles & Jones.	Gear cutter, 36" Cincinnati.
Bolt cutter, 2" Acme.	Gear shaper, 36" Fellows.
Broaching mche., No. 3 LaPointe.	Pipe machines, 3", 4" and 8" Jarecki.
Cold saw, 9" Espen-Lucas.	Punch and shear, Hilles & Jones.
Die slotter, Garvin.	Saw, Robertson high speed.
Gas blowers, Nos. 1, 3 & 4 American.	Slotters, 10" and 18".
Gear cutters, 16", 24", 36" and 48"	Stake riveter, 50" Rock River.
Gould & Eberhart.	

SECOND-HAND MACHINERY

FOR SALE BY

The H. A. Stocker Machinery Co., 566-72 W. Randolph St., Chicago

LATHES.

10"x4' Pratt & Whitney.	18"x10' Cincinnati.
12"x5' Star.	20"x8' Putnam.
14"x5' Pratt & Whitney.	20"x10' Cincinnati.
14"x8' LeBlond.	24"x14' Bradford.
15"x6' Von Wyck.	26"x10' Bradford.
15"x8' Von Wyck.	30"x12' Putnam.
16"x6' Blaisdell.	30"x16' Reed.
18"x6' Lodge & Davis.	32"x14' Draper.
18"x6' Davis & Egan.	36"x16' American.
18"x8' Fairbanks.	Stark bench lathes.

SHAPERS.

6" Boynton & Plummer.	16" Walcott.
14" Lodge & Davis.	16" Gould & Eberhardt.
14" Steptoe.	16" Rockford.
14" Sellers, slotter.	26" Putnam.
15" Hendy.	32" Walcott.
16" Smith & Mills.	

PLANERS.

22"x22"x5' Whitcomb.	30"x30"x8' Cincinnati.
24"x24"x6' Pond.	36"x36"x10' American.
26"x26"x6' Pond.	42"x42"x14' D. & H., open side.
28"x28"x7' Gray.	44"x44"x12' Pond, 2 heads.
28"x28"x7' Wheeler.	

GRINDERS.

6"x32" Norton.	No. 2 Osterlein universal.
6"x31" Modern.	No. 1 Cincinnati universal.
10"x36" Modern.	No. 70 Wells universal.
16"x66" Landis.	Large assortment dry grinders.
Saxton vertical cylinder grinder.	

MILLING MACHINES.

No. 26 Kemp Smith universal.	No. 2 Kearney & Trecker plain.
No. 2 Rockford universal.	No. 2 LeBlond plain.
No. 2 Owen universal.	No. 12 Garvin plain.
No. 1 LeBlond universal.	About 20 smaller machines, various makes.
No. 2B Brown & Sharpe plain.	

DRILLING MACHINES.

52" Prentice Bros.	24" Barnes.
32" Mechanics.	21" Aurora, tapping attachment.
34" Barnes.	About 40, 1-3-3 and 4-spindle; several multiple spindles.
28" Hamilton.	What size and style do you want?
26" Mechanics.	

POWER PRESSES.

No. 42 Robinson straight sided, 34" between uprights, double crank geared, weight 18,000 lbs.	No. 5-N American Can Co. geared.
No. 5 American Can Co. geared.	No. 430 McDonald, double crank.
	Numerous others.

DIE FILER.

No. 2 Cochrane & Bly.

SCREW MACHINES.

1"x44" Pratt & Whitney.	No. 58 National-Acme, 4-spindle.
1"x6" Pratt & Whitney.	1" Cleveland.
No. 4 Bardons & Oliver.	1" Cleveland.
24" Pearson.	No. 00 Brown & Sharpe.

TURRET LATHES.

No. 6 Brown & Sharpe.	No. 2 Warner & Swasey.
No. 1 Brown & S., forming, auto.	No. 2 Pearson.
No. 2 Brown & S., forming, auto.	13" Gisholt.

BORING MILLS.

72" Gisholt.	42" Colburn.
80" Pond.	34" Colburn.
51" Bullard.	No. 3 Binsse, horiz., nearly new.
52" Gisholt.	No. 2 Rockford drilling machine.

SECOND-HAND MACHINERY

The H. A. Stocker Machinery Co.—Continued.

GEAR CUTTERS.

Dwight-Slate pinion cutter. 36" Becker-Brainard, spur only.
20" Brown & S., spur and bevel. 42" Gould & Eberhardt.
30" Flather.

MISCELLANEOUS.

Pipe machines, bolt cutters, hack saws, cold saws, hammers.
Everything for the machine shop.

FOR SALE BY

Wayne Machinery Co., Taylor St. & L. E. R. R., Fort Wayne, Ind.

RANDOM SELECTIONS

From our stock of 500 machines.

Bolt cutter, No. 50 Green River.	Engine lathe, 30"x12" New Haven.
Boring mill, 34" Colburn.	Hack saw, No. 4 Racine, h. s.
Drill press, 20" Canedy-Otto.	Planer, 36"x36"x8" Powell.
Drill press, 20" Rockford, p. f.	Planer, 26"x26"x8" Pond.
Drill press, 36" Aurora, p. f.	Shaper, 16" Ohio, back geared.
Engine lathe, 14"x6" Cisco, q. c. g.	Turret lathe, 14" Lodge & Shipley.
Engine lathe, 14"x8" Sebastian.	Turret lathe, 12" Pratt & Whitney.
Engine lathe, 14"x32" Reed Bros.	Universal head, 10" Dickow.

Machine tools and pattern shop machines for every requirement.
Write today for Wayne List, which fully describes our complete stock.

FOR SALE BY

Wm. C. Johnson & Sons Machinery Co.,

210-212 Washington Ave.,

St. Louis, Mo.

LATHES.

14"x 5' Blaisdell.	24"x12' Lodge & Davis.
14"x12' Lodge & Davis.	26"x12' Fitchburg.
18"x14' Lodge & Davis.	26"x16' New Haven.
20"x 8' Wheeler.	30"x20' New Haven.
20"x10' Steptoe McFarland.	80"x10' centers, heavy turning.
20"x12' American, quick change.	

PLANERS.

24"x24"x6' Lodge & Davis.	32"x32"x16' Niles.
24"x24"x8' American.	36"x36"x8' Hamilton.
26"x26"x6' New Haven.	48"x48"x16' two heads.
32"x32"x12' Gray.	

DRILLING MACHINES.

32" Aurora, sliding head. 4' Fosdick radial.

BORING MILLS.

30" Niles, turret head. Niles Corliss engine cylinder boring machine.
83" single spindle.

10' Betts, two swivel heads.

AIR COMPRESSORS.

8x8 belted.	12x12x14 steam driven.
9x9x9 steam driven.	500' and 1,000' steam driven.
10x10x10 steam driven.	

MISCELLANEOUS.

Angle shear, dbl., L. & A., size 11.	Keyseater, No. 3 Baker Bros.
Bolt cutter, 14", double head.	Miller, No. 34 Fox.
Bolt cutter, 2" Schlenker.	Pulley lathe, 30" Stevens.
Brake, No. 14 Dreis & Krump, 10'.	Punch press, heavy, dbl. housing.
Grinder, 10x72 Landis.	Punch, 10" throat, rapid.
Hammer, steam, 350 lb.	Punch and shear, 60" throat.
Hammer, steam, 800 lb.	Rattler.
Hammer, Yeakley, 80 lb.	Rivet machine, continuous, 1".
Jack, hydraulic, 50 ton.	Screw machine, automatic 9-16".
Jacks, Simplex, 12 and 15 ton.	

SECOND-HAND MACHINERY

FOR SALE BY

Ansonia Manufacturing Co.,

Ansonia, Conn.

SCREW MACHINES.

- 6 Hartford automatic screw machines, 3-16" chuck capacity.
- 2 Cleveland automatic machines, $\frac{3}{4}$ " chuck capacity.
- 3 Cleveland plain automatic screw machines, $\frac{3}{4}$ " capacity.
- 3 Spencer automatic screw machines, $\frac{3}{4}$ " chuck capacity.
- 6 No. 1 Universal multiple automatic screw machines, $\frac{3}{4}$ " hex. chuck cap.
- 3 No. 2 Universal multiple automatic screw machines, $\frac{3}{4}$ " chuck capacity.
- 7 No. 515 National Acme multiple spindle machines, $\frac{3}{4}$ " capacity, including a 3 h. p. Westinghouse motor for each machine.
- 2 No. 52 Nat'l Acme mult. sp. mchs., $\frac{3}{4}$ " cap., including motor for each mch.

FOR SALE BY

Chas. Molitor Machinery Co.,

215 S. Clinton St., Chicago, Ill.

- Broaching machine, No. 4 Lapointe.
- Drill, 4 spdl., heavy pattern.
- Gap shear, 16" heavy, 36" square.
- Grinder, disc, No. 10 Besly.
- Horn press No. 3.
- Keyseater, No. 6 Morton.
- Keyseater and slotter.
- Lathe, 30"x26" Ames.
- Miller, bench, Rivett.
- Miller, No. 1 $\frac{1}{2}$ LeBlond.
- Tinners' rollers, brakes, shears, punch presses and compressors.
- 100 other iron and woodworking machines, motors, etc.
- Planers, 6' to 12', (3).
- Presses, arch, dbl. crank, 36"-54".
- Press, geared, No. 4 Am. Can.
- Press, geared, Waterbury-F., 4" str.
- Press, notching, American Can Co.
- Punch press No. 4, back geared.
- Screw mchs., B. & S. & Oliver, (10).
- Turret lathes, Warner & Swasey and Pratt & Whitney.
- Wiring machine, universal, Yoder.

FOR SALE BY

American Vulcanized Fibre Co.,

Wilmington, Dela.

- Bender or cornice brake, hand, capacity 6'.
- Buffing head, small, length of shaft 18", arbor $\frac{3}{4}$ ".
- Circular saw, Barnes Tool Co. type E. F. B., metal table 24x30.
- Die filer, No. 2 Cochrane-Bly.
- Drill press, 4-spdl. Dwight Slate, 21x36 table, c. s., 3-step cone for 2" belt.
- Drill press, W. F. & J. Barnes Co., 8x12 table, friction drive, t. & l. pulley.
- Engine lathe, screw cutting, 20"x11' Phoenix Iron Works, 8' bet. centers, bk. gd., c. r., one 10" and one 20" face plate, steady rest, universal 3-jawed 9" chuck, c. s., all gears complete.
- Grinder, special, Springfield Glue & Emery Wheel Co., length of shaft 18", arbor $\frac{1}{2}$ ", pulley for 3" belt, complete with c. s.
- Riveter, 24" throat, John Adt & Son.
- Speed lathe, 12"x4', 24" bet. centers, 4-step cone for 1 $\frac{1}{2}$ " belt.
- Speed lathe, 12"x5', 30" bet. centers, 4-step cone for 1 $\frac{1}{2}$ " belt.
- Splitter, L. S. Graves, cap. 26" bet. housings, bk. gd., power driven.
- Splitter, Commonsense, cap. 16" bet. housings, bk. gd., power driven.
- Splitter, L. D. Hawkins, cap. 38" bet. housings, bk. gd., power driven.
- Squaring shears, hand, John T. Robinson & Co., blade 42".
- Toggle screw press, Boomer & Boschert, chain drive, lift 16", plates, 6'x4' complete with c. s.
- Toggle screw press, Boomer & Boschert, chain drive, lift 12", plates 5'6"x2', complete with c. s.
- Turret lathe, 10"x3', pilot fd., screw fd. cross slide, 2-step cone for 3" belt, complete with friction c. s. and collets.
- Turret lathe, 14"x4 $\frac{1}{2}$ ', pilot feed, screw feed cross slide, 3-step cone for 3" belt, wire feed and complete set of collets, friction c. s.
- Turret lathe, 16"x5 $\frac{1}{2}$ ' Chandler & Farquhar, 4-step cone for 2 $\frac{1}{2}$ " belt, pilot wheel and lever feed, back geared, screw feed cut-off slide, complete set of collets, friction c. s., wire feed.
- Turret lathe, 16"x5 $\frac{1}{2}$ ' Windsor Machine Co., 2 $\frac{1}{2}$ " hole in spindle, 3-step cone for 4" belt, pilot turret feed, wire fer i, lever cross slide, plain c. s.

SECOND-HAND MACHINERY

FOR SALE BY

Rumely-Wachs Machinery Co., 121 N. Jefferson St., Chicago, Ill.

ENGINE LATHES.

12"x6' Davis.	20"x10' American.
14"x6' Von Wyck, taper.	24"x8' Putnam.
14"x8' Hendey, q. c., taper.	24"x24' Fifeild.
14"x8' American, q. c., taper.	36"x12' Schumacher & Boye.
18"x8' LeBlond.	36"x16' Fifeild.
18"x10' Rahn-Carpenter.	

TURRET LATHES AND SCREW MACHINES.

16" Pratt & Whitney turret.	16" Bardons & O., Fox.
18" Lodge & Davis, turret.	4" Garvin screw machine.
18" Springfield, Fox.	24" Gisholt, old style.
18" American, Fox.	

UPRIGHT DRILLS.

18" Baker.	22 1/2" Barnes, b. g.
20" Barnes, w. and l.	26" Sibley & Ware, sliding head.
20" Barnes, b. g.	28" Barnes, sliding head.
21" Cincinnati, b. g.	31" Barnes, sliding head.

DRILLS, MULTIPLE AND RADIAL.

3' Morris plain radial.	Avey 2-spindle, ball bearing.
3' Mueller plain radial.	Avey 4-spindle, ball bearing.
3 1/2' Bickford plain radial.	6-spindle Andrews.
5' Prentice plain radial.	16-spindle Baush.

SHAPERS.

10" Pratt & Whitney, crank.	16" Stockbridge, crank.
14" Lodge & Davis, crank.	20" Gould & Eberhardt, b. g.
15" Hendey, friction.	

PLANERS.

16"x16"x 4' Lathe & Morse.	36"x36"x 8' Fitchburg.
22"x22"x 5' Whitcomb.	36"x36"x 9' American, two heads.
30"x30"x 8' Flather.	36"x35"x15' Woodward & Powell
30"x30"x 8' Putnam.	frog and switch planer.

MILLING MACHINES.

No. 1 LeBlond, universal.	No. 2 Kempsmith, plain.
No. 1 1/2 Owen, universal.	No. 2 Owen, plain.
No. 2 Brown & Sharpe, universal.	No. 2-H Brown & Sharpe, plain.
No. 3 Owen, universal.	No. 3 Cincinnati, plain.
No. 4 Brown & Sharpe, universal.	No. 3 Newton, plain.
No. 1 Brown & Sharpe, plain.	No. 3 Pratt & Whitney, plain.
No. 1-Y Brown & Sharpe, plain.	No. 3 Becker, vertical.
No. 2 Brown & Sharpe, plain.	No. 4 Becker, vertical.

PRESSES.

No. 18 Bliss, o. b. i.	No. 5 Bauroth, o. b. i., geared.
No. 19 Bliss, o. b. i.	No. 2 Billings & Spencer, trimming.
No. 42 Bliss, o. b. i.	No. 12-A Adriance, drawing.
No. 119 Crosby, o. b. i.	No. 69-N Bliss, double action.
No. 3 American Can, o. b. i.	

GRINDERS.

10x20" Landis, universal.	No. 1 Norton, tool and cutter.
10x20" Landis, plain.	No. 3 Brown & Sharpe, tool and
No. 21 Landis, plain.	cutter.
No. 3 Landis, universal.	Springfield, cup wheel, 12".
Greenfield, universal.	Diamond, cup wheel, 12".

MISCELLANEOUS.

Boring mill, 42" Bullard.	Keyseaters, Nos. 2 & 3 M. & M.
Boring mill, 42" Colburn.	Punch, 19" Kling, 4x1 1/2".
Boring mill, No. 1 Barnes horiz.	Saw, No. 22 Espen-Lucas, 6" cap.
Brake, 8' Keene.	Saw, 24" Lucas, 15" I-beam cap.
Gear cutter, 24" Newark.	Slotter, 12" vertical.
Gear cutter, 36" Fellows.	Splitting shear, Badger-State.

SECOND-HAND MACHINERY

FOR SALE BY

Broadway Machinery Co., 236-238 Broadway, Cincinnati, Ohio

Bolt cutter, 1½" Economic.
Boring mills, 12" and 18".
Drills, 20", 22" and 26" Barnes.
Drill, 24" Bickford.
Drill, 32" Pratt & Whitney.
Drill, multiple, 3-spindle Wright.
Drill, multiple, 4-sp. Cincinnati.
Drill, multiple, 6-spindle Andrews.
Drill, 14-spindle Baush.
Electric motors and generators.
Lathe, 14"x5" Bradford.
Lathe, 14"x6" Bradford.
Lathe, 16"x8" Steptoe, c. r.
Lathe, 17"x6" Barker, c. r.

Lathe, 28"x21" Barker.
Lathe, 30"x18" New Haven.
Lathe, 36"x16" LeBlond, q. c.
Millers, Nos. 2 and 3 Kempsmith.
Planer, 24"x24"x7" New Haven.
Planer, 24"x24"x8" Gray.
Planer, 30"x30"x14" Miles, 2 heads.
Planer, 72"x72"x18" Niles, 2 heads.
Screw machine, 4" Cleveland auto.
Screw machine, 3" Cleveland auto.
Screw machine, 2"x24" Jones & L.
Shapers, 18" to 24", geared.
Shapers, 10" to 28", crank.
We buy and sell.

FOR SALE BY

L. F. Seyfert's Sons, Inc., 437 N. Third Street, Philadelphia

BORING MILLS.

84" Bullard, 2 heads.
94" Sellers, 1 head.

72" Niles, 2 heads.
36" Bullard, 1 head.

BOLT AND PIPE CUTTERS.

10" Cox.
6" E. C. & B.
6" Cox.

4" E. C. & B.
24" Bignal & Keeler, (5).
24" motor driven Landis.

MISCELLANEOUS.

Grinder, univ., No. 2 Oesterlein.
Grinder, univ., No. 3 Brown & S.
Punch and shear, double end, No. 2 Royersford.
Radial drill, univ., 3' Fosdick.
Radial drills, plain, 5' Prentiss, (2).

Shaper, 16" Kelly, b. g.
Shaper, 28" Gould & Eberhardt, b. g.
Slotter, 10-12" Dill.
Slotter, 18" Putnam.
Turret lathe, universal, 18"x6" No. 3 W. & S.

We also have a large stock of other iron working machinery, woodworking machinery, steam and electric power equipment.

We will buy your idle equipment for cash. What have you to offer.

FOR SALE BY

Brown-McDonald Machinery Co.,

906-908-910 North Market Street, - - - St. Louis, Mo

LATHES.

14", 16" & 18" Monarch, new, (5).
16"x6" American Fox, b. g., turret.
16"x6" Hamilton, h. s.

16"x8" Von Wyck, standard, new.
16"x6" American, h. s., comp. rest.
Speed lathes, all sizes, (6).

DRILLING MACHINES.

12" Acme, sgl. spdl., cap. ½".
Fox, 2-spindle, cap. ½".

Reed, 3-spindle, cap. ½".
20" Lodge & Davis, w. & l.

MISCELLANEOUS.

Gear cutter, No. 11 Dwight-Slate.
Hammer, brd. drop, 750 lb. Merrill.
Hammer, brd. drop, 1,500 lb. Merrill.
Press, No. 33 Swaine.
Press, horn, No. 1 Swaine.
Presses, foot, No. 3 Swaine, (3).

Press, horn and wiring, No. 1 Swaine.
Screw machine, No. 2 Pratt & W.
Shaper, 13" Juengst.
Shaper, 16" American.
Shear, pwr. sq., 8" Bertsch, cap. 16 ga.
Tapping machine, No. 1 Wells.

Large stock of sheet metal tools consisting of Square Shears, Folders, Seamers, Beaders, Crimpers, etc.

SECOND-HAND MACHINERY

FOR SALE BY

Niles-Bement-Pond Company, 111 Broadway, New York.

Located at Chicago, Boston and New York.

Send for Catalogue No. 18.

LATHES.

14x6 LeBlond, c. r., taper.
14x6 Bradford, c. r.
22x22 Niles.

40x16 Bement, b.g., not screw cutting.
44" P. & W. pulley lathe.

SCREW MACHINES, TURRET LATHES, ETC.

3/4" Hartford, automatic pin machine.
3/4" P. & W. automatic screw mach.
3/4" single turret Spencer automatic.
3/4" P. & W. 2 sp. automatic screw machine.
3/4" Acme old style 4-sp. automatic.

21-32" No. 2 Brown & Sharpe automatic screw machine.
3/4" Cleveland automatic.
1" P. & W. automatic.
3/4" 4-spindle Gridley.
1 1/4" 4-spindle Gridley.

BORING MACHINES.

5' Niles, 2 heads.
6' Pond, 2 heads, with slotting att.
7' Niles, 2 heads.
10' Niles, 2 hds. 220 v., motor drive.
10-16' Betts, 220 v., d. c., motor dr.

10-16' Bement, 220 v. motors.
2" sp. Kelly hor. bor. and drill.
3 3/4" sp. Bement hor. bor. & drill.
96" swing x 10' centers bor. & facing; weight: about 43,000 lbs.

UPRIGHT AND SENSITIVE DRILLS.

13" 1 sp. sensitive, motor dr., 110 v.
10" 3 sp. sensitive, Sigourney.
2 spindle dbl. column sen., Langelier.
17" 4 sp. gang, Jones & L.
21" Aurora, b. g., p. f., sta. head.
21" Aurora, tapping attachment.
30" ali. head, Gould & Eberhardt.

36" sliding head, Gould & E.
4 spindle Bement, multiple, 11' between housings.
No. 11 multiple drill, P. & W.
10 sp. adjustable R. & W., capacity 1 1/2" holes in 37" circles, belt or motor; weight: 30,000 pounds.

RADIAL DRILLS.

4 1/2' semi-radial, Barr.
4' plain, Pond.
4' Niles, univ.
5' Niles, plain.
5' plain, motor, Pond.

5' 6" universal, Niles.
6' heavy plain, Pond.
6' 10" semi-universal, Niles.
7' 6" full universal, Niles.
Univ. portable radial, Prentice.

MILLERS AND GEAR CUTTERS.

No. 1 Duplex Van Norman.
43x9 1/2 No. 3 Cincinnati plain, b. g.
No. 3 Becker universal.

36" spur gears, Pond.
72" spur gears, Niles.

PLANERS.

22x22x6 Harrington.
26x26x7 Niles, heavy type.
26x23x16 Miles, 2 hds.
30x30x6 Pond, 1 head.
30x30x8 Whitcomb, 1 head.
30x30x11 Niles, 1 head.
30x30x24 Sellers, 2 hds.

42x42x20 Miles, 3 hds.
48x48x20 Sellers, 3 hds.
72x60x20 Niles, 2 hds.
10' x 10' x 30' Niles, 4 heads.
10' x 10' x 36' Betts, 4 heads, 50 h. p., 220 v., motor drive.

SHAPERS AND SLOTTERS.

10" crank shaper, Miles.
12" crank shaper, Bement.
16" crank shaper, Niles, Worcester.
12" crank slotter, Bement.

20" Bement, 220 v. motor, traveling head, like new.
14" crank slotter, Niles.

RAILROAD MACHINERY.

42" Putnam car wheel borer.
42" Niles heavy car wheel lathe.
46" car wheel lathe, Bement.

Bement and Niles dbl. axle lathes.
Putnam double axle lathe, ex. heavy.

MISCELLANEOUS.

Bar cut-off saw, 22" diam. blade.
Cut-off machine, 3 1/2" P. & W.
Cut-off machine, 4 1/2" Starr.
Grinder, wet tool, Gisholt.
Grinder, drill, 3" Sellers.
Grinder, cutter and tool, LeBlond.

Grinder, plain, 5x32" Landis.
Grinder, univ., 10x30 Landis.
Grinder, 12x96" Springfield.
Hack saws, No. 2 Robertson.
Saw grinder, automatic.

SECOND-HAND MACHINERY

FOR SALE BY

The Machinery Warehouse, 3705 S. Ashland Ave., Chicago, Ill.

84"x54"x20' Sellers.
44"x44"x12' Pond.
42"x42"x14' D. & H.

24" Hendey.
20" Gould & Eberhardt.

30"x15' Prentice.
24"x12' Lodge.

60" Gang, plain radial.
54" Niles, plain radial.

We carry a full line of electrical equipment, air compressors and pumps. We also have more than 100 Corliss, automatic and vertical engines in stock. Write us for any size rebuilt.

PLANERS.

40"x40"x14' Putnam.
36"x36"x14' Sellers.
32"x32"x9' New Haven.

SHAPERS.

16" Cincinnati.
12" Boynton & Plummer.

LATHES.

16"x8' Star, (3).
15"x5' Shepard.

DRILLING MACHINES.

48" Bickford, plain radial.
26" Hofer, vertical.

FOR SALE BY

J. L. Osgood,

45 Pearl St., Buffalo, N. Y.

Automatics, 2" Hartford, (2).
Boring and chucking machine, 24"
Davis, with grinding attachment.
Cutting-off mch., 4" Hurlbut & R.
Drill, bench, with d. c. motor.
Drill, 20" Barnes.
Drill, 2-spindle W. & R., 4" cap.
Drill, 6-spindle Reed, 1/2" cap.
Finishing lathe, B. & S.
Gear cutter, spur, 36" G. & E. auto.
Grinder, plain, 48"x5" P. & W., with
pump and center grinding attachment,
double c. s. and elec. device.
Grinder, double disc, 18" Ransom.
Grinder, wet and dry, 16" Valley City.
Grinder, twist drill, wet, Heald.
Hammer, foot drop, 75 lbs.
Lathe, bench, No. 3 Stark, attach.

Lathe, 15"x6' Blaisdell.
Lathe, 16"x10' Wood.
Lathe, 18" x10' Lodge & Shipley, patent
geared head, cp rest, c. s.
Oil separator, No. 1, A-1.
Piston and piston ring machine,
Gridley automatic.
Radial drill, 42" American, b.g., p.f.
Screw machine, No. 1 Garvin.
Screw machine, No. 2 Garvin.
Screw machine, No. 4 W. & S.
Squaring shear, 30".
Tapper, horizontal, 5-16" B. & S.
Tapper, horizontal, 5-16" Garvin.
Turret lathes, brass, 16" Warner &
S., fric. gd. hd., chasing att., (2).
Turret lathe, hand, No. 4 Warner &
Swasey, plain head, wire feed.

FOR SALE BY

Badger-Packard Mchy. Co., 72-74-76 W. Water St., Milwaukee, Wis.

DRILLS.

10" Hofer, sensitive.
24" Mechanics, sliding head.

26" Mechanics, sliding head.
16" 4-spindle Barr.

LATHES.

No. 4 Barnes.
12"x6' Davis, r. and f. rest.
14"x6' Silk, compound rest.
14"x6' Lodge & Davis, pl. rest.
14"x6' Lodge & Shipley, c. r., q. c. g.
14"x8' Blaisdell, plain rest.

16"x6' Flather, comp. rest.
21"x12' Lodge & Davis, plain rest.
24"x12' Perkins, compound rest.
26"x12' Reed, compound rest, hollow
spindle.
2" Plain turret lathe.

MILLING MACHINES.

No. 2 Kearney & Trecker, plain.

No. 5 Kempsmith, plain.

RADIAL DRILLS.

23' Dreses-Mueller, plain.
3' Bickford, plain.

4' Fish, plain.

PLANERS.

20"x20"x4' New Haven.
24"x24"x6' Lodge & Davis.

26"x26"x8' Merrill.
60"x60"x16' Niles.

SECOND-HAND MACHINERY

FOR SALE BY

The Osborne & Sexton Machinery Co., . . . Columbus, Ohio.

LATHES.

13"x5' Reed, hollow spindle.
14"x8' thoroughly rebuilt.
20"x8' Springfield, h. s., c. r.
30"x14' Prentice, dbl. back geared.
23"-48"x15' centers, Harrington.

SHAPERS AND PLANERS.

14" Hendey.
30" Moynon, draw cut.
24x24x6' Chandler, 2 speed.
32x32x6' and 8' both Grays.
48x72x10' American, 2 hds., motor dr.

TURRET LATHES AND SCREW MACHINES.

12" Pratt & Whitney screw machine.
15" Pratt & Whitney, turret.
16" Warner & Swasey, grd. head.
18" American Fox lathe.

DRILLING MACHINES.

20, 22, 24 and 30".
Baker heavy duty, (2).
4-spd. multiple, Foote-Burt.
24" heavy duty Foote-Burt.
4-spd. Niles, 2" capacity.
30" radial, plain, (2).
6" radial, American, speed box, motor drive.

MISCELLANEOUS.

Broaching machine, Waterbury.
Cold saw, Lucas, 8" capacity.
Hammers, helve, Bradley, 25 & 60 lb.
Hammers, fric. bd., 400, 750 & 3,000 lbs.
Miller, 52" King, 2 hds., motor dr.
Oil engine, 10 h. p. Alamo, new.
Press, o. b., No. 3 Crosby.
Rolls, shovel blanking, Toledo.
Valve miller, Warner & Swasey.

FOR SALE BY

Frank Toomey, Inc., . . . 127 N. Third St., Philadelphia, Pa.

LATHES.

50"x27' New Haven.
50"x16' Pittsburg Machine Tool Co.
30"x18' Bement-Miles.
27"x21' Pratt & Whitney, taper att.
26"x17' Johnson, taper attachment.
26"x12' Blaisdell.
26"x12' Fifield.
24-40"x14' McCabe, double spindle.
21"x12' Lodge & Davis.
20"x 8' Ames.
22"x6'6" Rahn-Larmon, series "B", with turret att., (3).
14"x6' Lodge & Shipley.
17" Greaves & Klusman, (5).

PLANERS.

48"x48"x15' Sellers.
33"x33"x12' Woodward & Powell.
30"x30"x12' planer, modern.
30"x30"x9' Whitcomb.
18"x18"x5' Pond.
12" Moore crank planer.

SHAPERS.

16" Stockbridge, with centers.
16" Gould & Eberhardt, back grd.
16" American, back geared.
12" Bement.

MILLING MACHINES.

36"x12' slab, heavy pattern.
No. 3 Becker-Brain'd pl., table 12x42.
No. 1 Brainard plain, table 12x48.
24"x72"x18" Oesterlein full univ.
No. 6 Brown & Sharpe plain.
No. 13 Becker-Brainard universal.

MISCELLANEOUS.

Bolt cutter, 14" National.
Boring mill, horiz., 48" Bement.
Boring & turn. mill, 48" Sellers, 2 hds.
Bulldozer, No. 4 Williams & White.
Drill, 24" Snyder, sliding head.
Drills, upright, 30" Prentice, (2).
Hammer, steam, 350 lb. Bement-Miles, single frame.
Hammer, steam, 3,500 lb. Bement-Miles, double frame.
Hammer, board drop, 500 lb. P. & W.
Pipe machine, 4" Saunders.
Pipe machine, 6" Cox.
Pipe machine, 10" Bignall & K.
Pipe machines, 3" and 6" Curtis & Curtis, hand power, (2).
Press, PG-3 Ferracute.
Presses, combined turning and wiring, No. 22 Adriance, (2).
Pulley boring machine, 60" Harrington, upright.
Screw machine, No. 1 Bardons & Oliver, wire feed.
Shear, single end, 50" throat, 2" capacity, engine driven.

Dynamos, motors, engines and boilers. Wood-working machines both new and second-hand. Send for our stock books.

SECOND-HAND MACHINERY

FOR SALE BY

Bowman-Blackman Mch. Tool Co., 1513 N. Broadway, St. Louis, Mo.

COMPLETE SHOP EQUIPMENT.

Axle lathe, double, Bridgeford, single pulley drive through gear box.
Cold saw, 13" blade, Higley.
Cold saw cutting-off machine, 24" blade, Q. & C., Bryant type.
Drill grinder, Yankee.
Drill press, 20" Lodge & Davis, back gear, power feed.
Drill press, 40" New Haven, back gear, power feed.
Drill presses, 36" Prentice, 2 spindle, heavy duty, (2).
Drill, 4-spindle Baker, heavy duty.
Lathes: 14x6 Lodge & Shipley, patent head; 27x12 J. B. Reed, raising blocks to 32"; 27x8 heavy turning lathe, no screw cutting; 23x8 Blaisdell; 18x7 Lodge & Davis; 2x24 Jones & Lamson flat turret, with bar equipment.
Miller, plain, No. 3 Brainard.
Planers: 24x6 Lodge & Davis, 24x6 Powell, 26x7 Whitcomb.
Pulley boring machine, 36" Streit.
Pulley lathe, 30" Henley.
Radial drill, 34" Sellers, modern.
Shapers: 20" Cincinnati, 24" American.
Tool grinding and shaping machine, universal, No. 1 Sellers.
Tool and cutter grinder, universal, Greenfield.
Valve miller, 4-spindle Warner & Swasey.

FOR SALE BY

A. D. White Machinery Co., - 108-114 N. Jefferson St., Chicago

LATHES.

14"x 5' Putnam, (2).
16"x 8' Lodge & Davis, (2).
18-36"x8' Fay & Scott, gap.

DRILL PRESSES.

No. 1 Barr sensitive, (3).
20" Barnes, (3).
28" Barnes, sliding head.
28" Bickford, sliding head.
30" Kerkhoff, sliding head.
32" Bickford, sliding head.

PLANERS.

24"x 6' Pond.
26"x 8' Gray.
32"x 8' Gray.

PUNCH PRESSES AND SHEARS.

No. 16 Wold.
No. 5 Niagara, o. b. i.
No. 45 Crosby.

SCREW MACHINES AND TURRET LATHES.

Warner & Swasey w. f. screw mch.
No. 2 Garvin screw machine.
4" Hartfords, (3).
8" Cleveland.

MISCELLANEOUS.

Bolt cutters, 14 & 3" National, s. hd.
Grinder, drill, Yankee style "B".
Grinder, internal, No. 70 Heald.
Grinder, d.sc, 30" Ransom.
Grinder, cutter, Barr.
Hobber, Farwell No. 1.
Hammer, power, 80 lb. D. & E.
Keyseater, 16" Morton, portable.

20"x10' Porter.
28"x12' Fifield.
28"x25' Putnam.
34" Barnes, sliding head.
36" Mueller radial.
40" Aurora radial.
20" Barnes 4 spindle gang.
8-spindle Valley City multiple.
12-spindle Baush multiple.
No. 3 Ferracute, double action.
King power forcing press.
Nos. 242 & 152 Niagara pwr. sq. sh.
No. 00 B. & S. automatics, (6).
No. 2 Smurr & Kamen turret lathe.
28" Pond rigid turret lathe.
30" Lodge & Shipley turret.
Millers, No. 3 Fox, hd. and pwr. fd.
Millers, No. 12 Garvin, (3).
Miller, plain, No. 9 Kempsmith.
Miller, mfg., No. 6 Grant.
Pipe machine, 2" Jarecki.
Saw, univ. cut-off, Q. & C. No. 3-B.
Shapers, 16" and 24".
Tapper, No. 2 Garvin horizontal.

50 h. p. Gas Producer Plant, with 50 h. p. Fairbanks-Morse engine. Does not cost more than \$1.00 a day to operate.

MACHINE TOOLS

FOR

IMMEDIATE SHIPMENT

LARGE STOCK ON HAND

- 20 PRENTICE and NATIONAL-ACME AUTOMATICS
 - 12 PRATT & WHITNEY RIFLE BARREL DRILLING MACHINES
- 121 ENGINE LATHES
 - 119 UPRIGHT DRILLS
- 26 RADIAL DRILLS
 - 40 VERTICAL BORING MILLS
- 25 HORIZONTAL BORING MACHINES
 - 35 SHAPERS
- 22 PLANERS
 - 87 MILLERS and GEAR CUTTERS
- 60 HAND TURRET and SCREW MACHINES
 - 17 AUTOMATIC SCREW MACHINES
- 12 AUTOMATIC CHUCKING MACHINES
 - 50 BUFFERS and GRINDERS
- 30 PLAIN and UNIVERSAL GRINDERS
 - 38 PUNCH PRESSES
- 25 METAL SAWS and CUT-OFF MACHINES
 - 350 MISCELLANEOUS

WHICH DO YOU NEED?

HILL, CLARKE & CO. of CHICAGO
125 N. CANAL STREET

Large Plain Grinder.

Landis 30" swing, 150" between centers.

Ball Race Grinders.

Several No. 5 Rebuilt Rivett.

Planers.

48"x48"x20' Putnam, Two Heads on the Rail.

Millers.

Several Rebuilt No. 6 Brainard, Lincoln Type.

Chandler & Farquhar Company

419-425 Atlantic Ave., Boston, Mass.

WHEN YOU INQUIRE

of advertisers herein, won't you kindly remember to say somewhere in your communication that the inquiry comes from Hitchcock's Machine Tool List? Advertisers are human; they like to know that the medium in which they spend their money is received and consulted by machinery users. Not being mind readers, they can only know this when you tell them, and if you neglect to tell them, the Tool List is deprived of credit for the service it has rendered.

THE E. L. ESSLEY · MACHINERY · CO

555-557 WASHINGTON BLVD.

CHICAGO

222 GRAND AVE. MILWAUKEE

Boring Mills.

30" Bullard, sw. turret, pl. table, (2).
51" Niles, 2 heads, plain table.
60" Baush, 2 heads, plain table, (3).
No. 1 Barrett horiz. cyl. borer.
No. 2 Universal horiz., nearly new.

54" Colburn with center boring spindle and full set of fixtures & tools for flywheel work, like new.
No. 2 Rockford horizontal boring & drilling machines, (2).

Radial Drills.

4' Gang plain radial, with extended column.

3 1/2' Baush plain, cone drive.
2' American sensitive radial.

Grinders.

No. 1 Cincinnati, cutter and tool.
No. 6 Bryant, hole and face.

No. 6-J Gorton comb. disc & surface.
No. 7 Besly 18" double disc.

Hammers.

40 lb. Bradley, helve, r. c.
100 lb. Wais & Roos, belted.

600 lb. Pratt & Whitney board drop hammer.

Lathes.

We offer Engine Lathes in all sizes from 9" to 50". What size and type do you need? A few good ones left for shell work.

Milling Machines.

No. 1 Brown & Sharpe plain, (2).
No. 2 Kempsmith plain.
No. 3 Brown & Sharpe plain.
No. 13 Becker-B., universal.
No. 1 Kempsmith, plain.
No. 2 Kearney & T., plain.

No. 3 LeBlond, plain.
No. 2 Owen, plain, new.
No. 4 Garvin plain.
No. 3 Owen, univ., new.
Windsor hand miller.

Turret Lathes.

18" Warner & S. brass workers' lathe.
20" Foster Fox monitor.
2"x24" Jones & L., cone head, (3).

28" Gisholt, with taper attachment.
Pearson hub machine, (could be used for boring shells).

Screw Machines.

No. 4 Bardons & Oliver friction hd., power feed.

No. 1 Pratt & W., plain head.
No. 2 Pratt & W., plain head.

Miscellaneous.

Bar saw, 64" Smith & P., new.
Bending roll, 6" Niles.
Bolt cutter, 14" Merriam.
Bolt cutter, double, 14" Acme.
Centering mch., 2-sp. Pratt & W.
Gear cutter, 26"x10" Cincinnati auto.
Gear cutters, 28"x8" No. 3 B. & S., (2).
Gear hobbbers, 12" Adams-F., (4).
Gear cutter, No. 3 Adams, like new.
Gear hobbbers, 12" Reynolds, (2).
Gear hobber, No. 2 Rhenania, new.
Keyseater, 18" Morton.
Oil separator, Reed & Curtis.
Planer, 20"x20"x4' Pease.
Planer, 21"x18"x4 1/2' Putnam.
Planer, 24"x24"x8' Pease.

Planer, 30"x30"x7' Whitcomb.
Pulley lathe, 26" Stevens.
Pulley lathe, 30" Streit.
Punch p., Nos. 1, 2 & 4 Rock'd.o.b.i.
Punch presses, 119 Crosby, o.b.i., (2).
Punch & s., dbl., 1"x1" 17D New Doty.
Punch and s., sgl., 1"x1" No. 2 Cin.
Saw, No. 14 Higley, motor drive.
Shaper, 16" Smith & Mills.
Shaper, 16" Walcott.
Shaper, 20" Hendey.
Shaper, 20" Kelley, s. g.
Shear, pwr. squaring, Niagara, 14 ga.
Sprocket b. & t. mch., Baker.
Wire s. & c.o.mch., 3-16"x4' Adt, new.
Wire s. & c.o.mch., 3-16"x10' Shuster.

We have just bought a large shop full of engine lathes and turret lathes in sizes from 16-in. to 24-in. Just the thing for 4.5 high explosives. Wire if interested.

We just received a lot of AVEY High Speed Ball Bearing Drills, slightly used, in units of one, two, three and four spindles. Immediate delivery; act quickly.

Second-Hand Machinery

for sale by

Vonnegut Machinery Co.

121 S. Meridian St.,

Indianapolis, Ind.

- 1—18"x 6' Lodge & Davis Turret Lathe.
- 1—24"x 8' Lodge & Shipley Turret Lathe.
- 1—30"x 16' LeBlond Engine Lathe.
- 1—42"x 14' Fifeild Lathe.
- 1—34" Colburn Boring Mill.
- 1—No. 200 Heald Ring Grinder.
- 1—No. 210 Heald Ring Grinder.
- 1—No. 60 Heald Cylinder Grinder.

Although we are presenting an unusually limited list of Machinery at the time this copy goes to press, we expect additional second-hand machinery daily and solicit your inquiries, whether or not the specifications of your requirements are included in our list.

Second-Hand Wood-Working Machinery

For a large list of used wood-working machinery, consult the **Wood-Working Machinery List**, a publication similar to this but devoted to the advertising of saw-mill and wood-working machines. A copy may be had on application to the publisher, **A. H. Hitchcock, 1220-1235 Caxton Building, Chicago, Ill.**

Better Even Than Good Second-Hand

TURRET LATHES.

- 4 Potter & Johnston automatics, 8"x16", 20" swing.
- 2 Potter & Johnston automatics, 5"x16", 24" nol. spdl., 17" swing.
- Potter & Johnston dbl. turret lathe, 2" hollow spindle, 22" swing.
- J. & L. flat turret, 2x24, sliding hd.
- J. & L. flat turret, 2x24, cone head.
- Bardons & Oliver No. 12 bar and chucking mche. 4" hollow spindle.
- 2 Garvin No. 14, fr. hd., 3 1/2", c. 1 15-16"
- Garvin No. 13 wire fd. grd. fric. hd.
- Garvin No. 3 screw machine.
- Hartford auto. screw machine, 1 1/2".

"USED" ENGINE LATHES.

- 12"x5" Reed.
- 20-36"x14" Harrington, gap bed.
- 22"x16" Pond, hol. spindle, chuck.
- 24"x10" Blaisdell.
- 24"x10" Putnam.
- 26"x14" Prentice Bros., double b. g.
- 28"x12" New Haven.
- 28"x14" Putnam.
- 28-48"x14" Harrington, gap bed.
- 28-44"x16" McCabe, double spindle.
- 30"x14" Reed.
- 30"x12" Reed.
- 30"x14" Bement-Miles, extra heavy.
- 32"x10" Putnam.
- 40"x10" Betts.
- 42"x20" Betts, triple geared.
- 42" Dbl. hd. car-wheel lathe, Niles.
- 48"x24" Fitchburg, triple-grd., raise-blocks to swing 36".
- 50"x16" Pond, triple-geared.
- 56"x16" Putnam.
- 52"x28" Heavy, tri.-grd. forge lathe.

NEW ENGINE LATHES.

Ready for Immediate Shipment.

- 3 16"x6" 3-step cone, dbl. back gears.
- 28"x14" 3-step cone, dbl. back gears.
- 32"x14" 3-step cone, dbl. back gears.
- 7 McCabe dbl. spindle, 26-48"x14".
- 3 McCabe dbl. spindle, 26-48"x16".

RADIAL DRILLS.

- 7' arm, plain, Harrington.
- 6' arm, plain, Pond.
- 6' arm, full universal, American.
- 5 1/2' arm, plain, Prentice Bros.
- 5' arm, plain, Prentice Bros.
- 5' arm, half universal American.
- 4' arm, plain, Bement-Miles.

MILLING MACHINES

Planer Type.

- 24"x12" Bement-Miles.
- 30"x8 1/2" Bement-Miles.
- 30"x10" Ingersoll.

MILLING MACHINES.

- No. 4 B. & S., table 60"x16" plain.
- No. 13 Garvin, plain, table 42"x12".
- Mfrs. style, table 58"x16", Newton.
- Duplex, hds adj., tbl. 72"x14" Newton

SHAPERS.

- 10" stroke, crank, Pratt & Whitney.
- 12" stroke, Sellers, traveling head.
- 12" stroke, Sellers, double head.
- 14" stroke, Prentis, crank.
- 16" stroke, plain, crank, Smith & M.
- 20" stroke, plain, geared, Kelly.
- 25" stroke, plain, crank, Smith & M.

PLANERS.

- 76"x76"x14" Pond, 3 heads.
- 60"x60"x18" Woodward & P., 4 hds.
- 60"x60"x14" Sellers, 4 heads.
- 60"x60"x12" Pond, 4 heads.
- 48"x48"x16" Niles-Bement-P., 4 hds.
- 48"x38"x10" New Haven, 1 head.
- 44"x36"x8" Gray, 2 heads.
- 38"x38"x12" Niles, 1 head.
- 38"x38"x8" Niles, 4 heads.
- 36"x36"x12" Sellers, 2 heads.
- 36"x36"x10" Sellers, 4 heads.
- 36"x36"x10" Pond, 2 heads.
- 36"x36"x8" Sellers, 4 heads.
- 36"x36"x8" Pond, 2 heads.
- 36"x36"x8" Pond, 1 head.
- 30"x30"x10" Niles Tool Works, 1 hd.
- 30"x30"x8" Woodward & P., 2 hds.
- 30"x30"x8" Powell, 1 head.
- 30"x30"x7 1/2" Sellers, 2 heads.

UPRIGHT BORING MILLS.

- 12" Dbl. head, Pond Mch. Tool Co.
- 7" Double head, Niles Tool Works.
- 6" Double hd., Pond Mch. Tool Co.
- 4 1/2" Double head, Bullard.
- 3 1/2" Double head, Bullard.
- 3" Double head, Bullard.

SLOTTERS.

- 24" stroke, Wm. Sellers & Co.
- 19" stroke, Bement-Miles.
- 12" stroke, Niles Tool Works.

BRIDGE AND BOILER SHOP TOOLS.

- Rotary planer, 42", motor, Newton.
- Bending rolls, 10' 8" drop end housing, Hilles & Jones.

- 60" thr. punch & shrs. sgl., Hilles & J.
- 60" thr. punch & shrs. sgl., Hilles & J.
- 48" thr. punch & shrs. sgl., Long & A.
- 42" thr. punch & shrs. sgl., Hilles & J.
- 30" thr. punch & shrs. sgl., Long & A.
- 10' bending rolls, drop end, H. & J.

GEAR CUTTERS.

- 36" Gear shapers, spur and internal, Fellows.
- 36" Spur and bevel, Gould & E.
- 22" Spur and bevel, Gould & E.
- 22" Spur and spiral, Cleveland.

MISCELLANEOUS.

- Cutting-off mch. 9" Bement-Miles.
- Steam hammer, 400 lbs. Erie.
- Keyseater, Morton 16".
- Cold saw, Lea-Simplex, 5" round.
- Grinders, Pipe machines, etc.

J. J. McCABE, - 30 Church St., New York

In replacing our manufacturing equipment we find the following first-class

Used Machine Tools

which we offer at attractive prices

PLANERS & SHAPERS

No. A —30"x30"x10' Detrick & Harvey, open side.

No. B —36"x36"x12' Niles.

No. 219—24"x24"x12' Ohio.

No. 258—72"x72"x30' Niles.

GRINDERS

No. 629—No. 16 Landis plain.

No. 650—No. 11 Landis plain.

No. 668—No. 3 Landis plain.

No. 694—No. 24 Landis plain.

No. 696—Rivett grinder.

No. 703—No. 1 LeBlond univ. cutter and tool grinder.

MISCELLANEOUS

No. 432—Gardam multiple (4-spindle) drill.

No. 2005—Ingersoll-Sergeant Drill Co. 8"x8" belt-driven double acting air compressor.

MISCELLANEOUS—CONT.

No. 1326—two 2" Cleveland automatic turret machines.

No. 1340—1" Cleveland automatic turret machine.

No. 1329—2½" Hartford automatic screw machine.

No. E —Pawling & Harnischfeger horizontal boring machine with Baush 6-spdl. att.

No. 1363—12"x40" Mumford molding machine.

No. 1379—Universal swivel table for radial drill.

No. 1401—Gleason mitre gear tester.

No. D 1355—Centering machine, chuck capacity 5".

No. 661—Globe tool sharpener for ½"x6" wheels.

The Lodge & Shipley Machine Tool Co.

Cincinnati, Ohio, U. S. A.

We are making some changes in our equipment and we offer at very reasonable prices, the following:

1—30"x30"x 8' S. H. Smith-Silk Planer.

1—36"x36"x10' D. H. Pond Planer.

1—42"x42"x12' Wheeler Planer, S. H.

The Greaves-Klusman Tool Co.

Cincinnati, Ohio

Tucker's Safety First



Closed

Oil Hole Covers
Require but one hand to pump in the oil. Adapted to all kinds of mechanism having oil holes leading to a bearing.

*Send for Catalogue
Oil Hole Covers
and Compression
Grease Cups*



Open

Style E



Style C



Style F, Drive



Style A



Style D



Style B



Open



Closed



Compression
Grease Cup



Rotary Head

W.C. & F.C. TUCKER, Hartford, Conn.

Two Large Arms Manufacturers

Have just installed over 250 "New Britain"
Drop-Head Polishing Machines

ONE OF THEM ordered 145, the other bought more than a hundred, because "New Britains" met their demand for top-notch efficiency and capacity.



(Cut shows belt loose)

EVERY DETAIL of design and construction is the result of careful study and experiment--there's a good mechanical reason for every feature. Belted from below, it does away with idlers, clutches and countershafts. The downward pull of the belt insures a steady, true running wheel, and nearly doubles the life of the spindle.

SELF-ALIGNING boxes and self-oiling bearings, further provide for smooth, easy running under even the heaviest loads, and speeding up to 5,000 r. p. m. A self-locking lever starts and stops the machine instantly. Protection from oil and dust greatly increases the life of the belt. Wheels may be hooded and connected with the exhaust system.

Whether you do much or little polishing and grinding, investigate the "New Britain" for efficiency, durability, safety and sanitation. Write for our Bulletin.

The New Britain Machine Co.
60 Chestnut St., New Britain, Conn.

